Candid Advice
Spurs Better PR Methods—p. 9

Growing Mechanical Research Program . . . p. 52

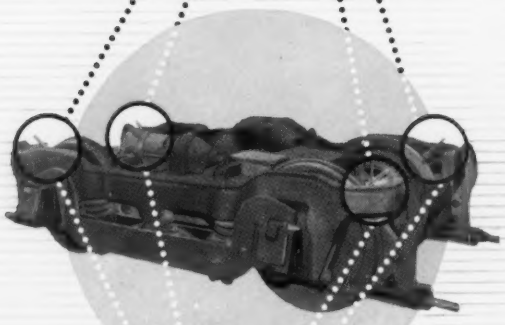
# RAILWAY AGE

JUNE 17, 1957 • THE INDUSTRY'S NEWSWEEKLY

EXTEND

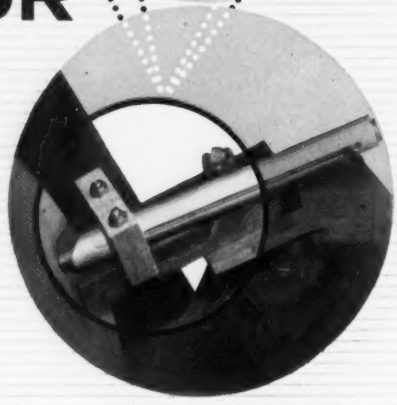
# LOCOMOTIVE WHEEL LIFE

# 30% TO 300%!



WITH *Nalco* TYPE TA **FLANGE LUBRICATOR**

USING *Nalco* **"MOLY"** STICKS



Nalco "Moly" Stick is a highly-efficient *dry* lubricant that maintains a lubricating surface between locomotive wheel flanges and track under extremes of pressure and temperature . . . without *picking up dirt and sand to form a grinding compound.* In new Nalco Type TA Lubricators, "Moly" Sticks provide automatic flange lubrication that has extended wheel life from a substantial 30% to as much—particularly on yard locomotives—as a whopping 300%!

Cost of Nalco Type TA Lubricators and "Moly" Sticks is small. Maintenance is limited to occasional stick replacements. Complete installation of lubricators on a diesel unit can be done by your shop personnel in four hours or less.

Call or write for details on the simplicity and continuing economy of Nalco Flange Lubrication for your locomotives.


**NATIONAL ALUMINATE CORPORATION**

6200 West 66th Place, Chicago 38, Illinois

POrtsmouth 7-7240

CANADA: Alchem Limited, Burlington, Ontario

ITALY: Nalco Italiana, S.p.A.

WEST GERMANY: Deutsche Nalco-Chemie GmbH

SPAIN: Nalco Espanola, S.A.


*Nalco*® **PRODUCTS...** SERVING RAILROADS THROUGH PRACTICAL APPLIED SCIENCE

PROTECTING MORE AND MORE CARS

WITH INEXHAUSTIBLE ENDURANCE

# protection


# with endurance

## MINER FR-16 RUBBER DRAFT GEAR

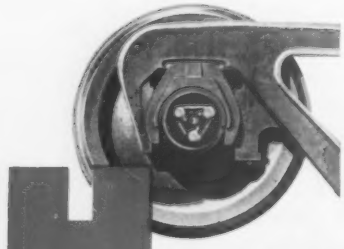
WE CORDIALLY INVITE YOU TO
SUITE SIXTEEN
ROOM 1606
HOTEL SHERMAN
AAR MECH. DIV. MEETING
JUNE 25, 26, and 27, 1957

W. H. MINER, INC. · CHICAGO

# Why rail freight service is better than ever today

**ONE REASON IS MECHANIZED TRACK MAINTENANCE.** The picturesque "gandy-dancer" with his pick and shovel has given way to amazing machines that automatically jack up rails, replace ties, drive spikes, clean and tamp ballast. Today's better tracks help heavier trains carry more freight faster and smoother.


**ONE MORE BIG REASON IS HYATT HY-ROLL BEARINGS** for non-stop freight. HYATT Hy-Rolls eliminate delays for bearing inspection or lubrication because there's a 3-year lubricant supply sealed in. HYATTS have husky *straight cylindrical rollers* with extra load-carrying capacity for extra reliability, so freight cars can safely deliver the goods on speedier schedules, unhampered by costly hotboxes. That's why 27 leading lines have already adopted the HYATT Hy-Roll as a key part of their progressive modernization programs—to benefit all America with faster, more dependable freight service. Hyatt Bearings Division of General Motors, Harrison, New Jersey.



Another GM GENERAL MOTORS contribution to railroad prosperity

**HYATT HY-ROLL BEARINGS**
**FOR NON-STOP FREIGHT**

RAILWAY AGE The Industry's Newsweekly

Vol. 142, No. 24
June 17, 1957

## Departments


| | |
|---|---|
| Current Publications | 89 |
| Freight Car Loadings | 13 |
| Letters from Readers | 84 |
| New Equipment | 13 |
| People in the News | 63 |
| Railway Market | 13 |
| Railroading After Hours | 61 |
| The Action Page | 92 |
| What's News in Products | 78 |


*EDITORIAL AND EXECUTIVE OFFICES*
● *NEW YORK 7, 30 CHURCH ST.*

JAMES G. LYNE, Editor
ROBERT G. LEWIS, Publisher

EXECUTIVE EDITOR ..... Joe W. Kizzia
MANAGING EDITOR ..... C. B. Tavenner
NEWS & FINANCIAL EDITOR .... Fred C. Miles
TRAFFIC-TRANSPORTATION .... G. C. Hudson
MECHANICAL ..... H. C. Wilcox
F. N. Houser, Jr. James F. Berge
ELECTRICAL ..... A. G. Oehler
SIGNALING & COMMUNICATIONS
John H. Dunn Robert W. McKnight
REGIONAL NEWS ..... Robert B. Keane
PRESENTATION ..... Franklin Ryan
LIBRARIAN ..... Edith C. Stone
EDITORIAL ASSISTANTS
Ann Ortlinghaus June Meyer
DIRECTOR OF PRODUCTION .... M. J. Figa, Jr.
DIRECTOR OF RESEARCH .. Kermit C. Phillips
ART DIRECTOR ..... Russell F. Rypsam

● *CHICAGO 3, 79 WEST MONROE ST.*

EDITOR EMERITUS ..... Samuel O. Dunn
WESTERN EDITOR ..... Wallace W. Abbey
TRAFFIC-TRANSPORTATION .. T. H. Desnoyers
MECHANICAL ..... Norman E. Gillespie
ENGINEERING ..... M. H. Dick
R. E. Dove R. M. Schmidl
REGIONAL NEWS ..... Richard Davis
EDITORIAL ASSISTANT ..... Wanda Brown

● *WASHINGTON 4, NATIONAL PRESS BLDG.*

WASHINGTON EDITOR ..... Walter J. Taft

Railway Age, established in 1856, is a member of the Audit Bureau of Circulation (A.B.C.), the Associated Business Publications (A.B.P.) and the Railway Progress Institute (R.P.I.). It is indexed by the Industrial Arts Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.

Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn. James G. Lyne, president. Arthur J. McGinnis, executive vice-president and treasurer. F. A. Clark, vice-president and secretary.

PAID CIRCULATION THIS ISSUE ... 14,536

## CONTENTS and
# Week at a Glance

**Do the RRs 'fumble' press relations? ..... p. 9**

Newspaper men said so at the recent annual meeting of the Railroad Public Relations Association; AAR President Faricy asserted history's evaluation of railroads will be shaped, in large part, by the industry's publicists.

**Demurrage charges will rise July 1 ..... p.11**

New rates, approved by the ICC, will be $4 per car per day for the first four days beyond free time, and $8 for each day thereafter.

**What's new in AAR research ..... p.52**

The association's Mechanical Division research program for 1957 will cost almost $600,000. This latest article in our "Contributions to Railway Research" series points out that the engineering laboratory, to be finished this year, will be available for work on fatigue testing of axles and testing diesel fuel and lubricants.

**How C&O speeds car reports to shippers ..... p.56**

To provide precise car location and train consist information promptly, the Chesapeake & Ohio has installed a systemwide printing telegraph network.

**'High water' in the Southwest ..... p.58**

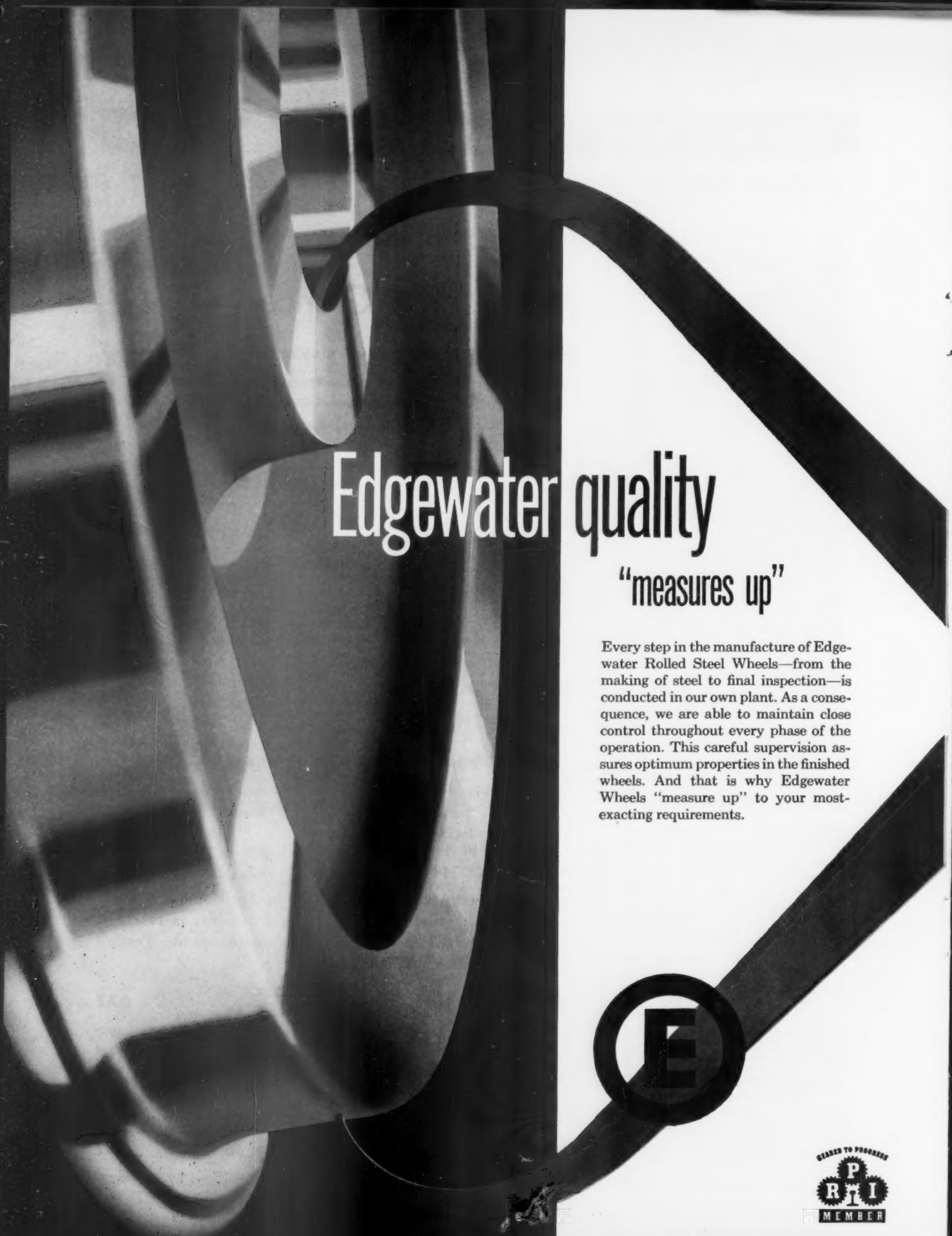
Incessant rains and 650 tornadoes in April and May alone caused widespread damage to railroad facilities in that part of the country. The downpours have abated, but the Weather Bureau predicts still more rain.

**What's the right size computer? ..... p.62**

Some railroads, for various reasons, aren't able to use king-size "giant brains." Here's what the B&M is doing as a first step toward developing a reports and accounts system that will probably hinge on use of a medium-size "Univac File Computer."

**RR critics aim at the wrong target ..... p.92**

Railroad management has all the problems faced by the man-



# Edgewater quality

## "measures up"

Every step in the manufacture of Edgewater Rolled Steel Wheels—from the making of steel to final inspection—is conducted in our own plant. As a consequence, we are able to maintain close control throughout every phase of the operation. This careful supervision assures optimum properties in the finished wheels. And that is why Edgewater Wheels "measure up" to your most-exacting requirements.



**Edgewater Steel Company**

P. O. BOX 478, PITTSBURGH 30, PENNA.

## Current Statistics

| | |
|---|---|
| Operating revenues, four months | |
| 1957 | $3,459,398,550 |
| 1956 | 3,411,490,931 |
| Operating expenses, four months | |
| 1957 | $2,711,046,036 |
| 1956 | 2,650,434,696 |
| Taxes, four months | |
| 1957 | $363,854,120 |
| 1956 | 361,667,867 |
| Net railway operating income, four months | |
| 1957 | $295,474,543 |
| 1956 | 313,697,804 |
| Net income estimated, four months | |
| 1957 | $221,000,000 |
| 1956 | 237,000,000 |
| Average price 20 railroad stocks | |
| June 11, 1957 | 90.72 |
| June 12, 1956 | 100.82 |
| Carloadings revenue freight | |
| Twenty-two weeks, 1957 | 14,882,795 |
| Twenty-two weeks, 1956 | 15,785,672 |
| Average daily freight car surplus | |
| Wk. ended June 8, 1957 | 25,151 |
| Wk. ended June 9, 1956 | 10,689 |
| Average daily freight car shortage | |
| Wk. ended June 8, 1957 | 845 |
| Wk. ended June 9, 1956 | 5,155 |
| Freight cars on order | |
| May 1, 1957 | 105,190 |
| May 1, 1956 | 137,436 |
| Freight cars delivered | |
| Four months, 1957 | 34,210 |
| Four months, 1956 | 20,972 |
| Average number railroad employees | |
| Mid-April 1957 | 992,593 |
| Mid-April 1956 | 1,048,965 |

**ADVERTISING SALES DEPARTMENT**

Duane C. Salisbury, vice-president, director of sales

New York 7, N.Y., 30 Church st., WO-4-3060
*J. S. Vreeland, vice-president, F. T. Baker, W. E. Glasby, J. C. Lyddy*

Chicago 3, Ill., 79 W. Monroe st., RA-6-0794
*J. R. Thompson, vice-president, J. W. Crossett, J. D. Dolan, W. J. Gatenby*

Cleveland 13, Ohio, Terminal Tower, MA-1-4455, *H. H. Melville*, vice-president
*C. J. Fisher, H. M. Blunt*

Atlanta 9, Ga., 22 Eighth st., N.E., *J. S. Crane*

Dallas 19, Tex., 3908 Lemmon ave., Lakeside 2322, *Joseph Sanders*

Los Angeles 17, Cal., 1151 W. Sixth st., MA-6-0553, *Fred Klaner, Jr., B. J. Erickson*

Portland 5, Ore., 1220 S.W. Morrison, Ca-7-4993, *L. B. Conaway*

San Francisco 4, Cal., 244 California st., GA-1-7004, *Lewis Vogler*

London E. C., 2, Eng., 48 London Wall
*Sibley-Field Publishing Co., Ltd.*

Frankfort am Main (16), West Germany, Wittelsbacher Allee 60
*Georg J. Linder*
*Continental European Representative*

SUBSCRIPTION TO RAILROAD EMPLOYEES ONLY IN U.S., U.S. POSSESSIONS, CANADA AND MEXICO, $4 ONE YEAR, $6 TWO YEARS, PAYABLE IN ADVANCE AND POSTAGE PAID. TO RAILROAD EMPLOYEES ELSEWHERE IN THE WESTERN HEMISPHERE, $10 A YEAR; IN OTHER COUNTRIES, $15 A YEAR—TWO-YEAR SUBSCRIPTIONS DOUBLE ONE-YEAR RATE. SINGLE COPIES 50c, EXCEPT SPECIAL ISSUES. CONCERNING SUBSCRIPTIONS WRITE R. C. VAN NESS, CIRCULATION DIRECTOR, 30 CHURCH ST., NEW YORK 7.

## Week at a Glance CONTINUED

agement of any manufacturing industry, plus two important ones with which no other large business is faced: (1) the need to adjust to rapidly changing transportation conditions, and (2) rigid governmental restrictions and regulations which impede, or intolerably delay, any change whatsoever.

### SHORT AND SIGNIFICANT

**Permission to combine . . .**

their trackage in the 48-mile territory between Binghamton, N.Y., and a point 10 miles east of Elmira, for both passenger and freight service, is to be requested by the Erie and the Lackawanna. New arrangement would involve $1½ million expenditure and go into effect in the summer of 1958.

**First streamlined train . . .**

placed in service on an Eastern railroad—the Reading's Philadelphia-New York "Crusader," which began operating December 13, 1937—returned to service last week with a "new look" after a two-month leave of absence. The five-car stainless steel express underwent complete overhauling at the railroad's Reading, Pa., car shops.

**A 'no-show' penalty of $3 . . .**

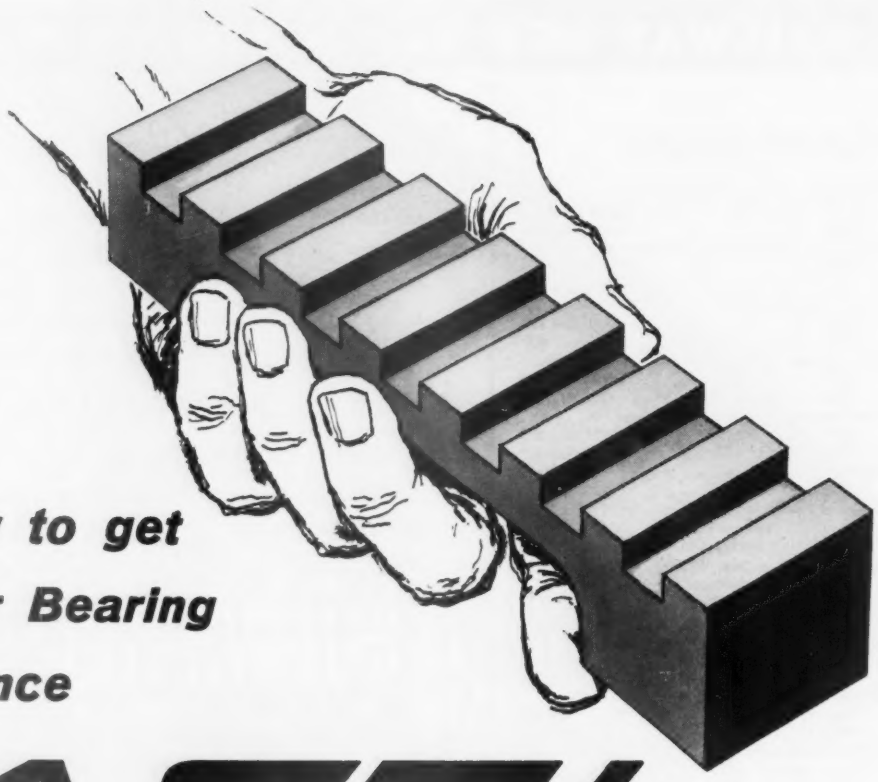
will apply, effective September 15, when air-travel reservations are canceled after flight time. This plan of the regularly scheduled domestic air lines has been approved by the Civil Aeronautics Board. The $3 will be collected by deducting it from the cost of the ticket prior to returning the balance to the purchaser.

**Rock Island's Talgo . . .**

will leave Chicago-Peoria service about August 1, take on Chicago-Joliet suburban service about October 1, after delivery of one Talgo coach from ACF and conversion of existing Talgo diner to a coach.

**One of the largest . . .**

single peacetime passenger movements in U.S. railroad history is in the offing. More than 30,000 Boy Scouts will travel by train from all parts of the country to their Fourth National Jamboree at Valley Forge State Park, July 12-18. Counting home-to-Jamboree-to-home and local round trips, some 218 separate trains, carrying an estimated 168,000 passengers, will be supplied for the encampment.



# *Surest way to get Better Bearing Performance*

# *FAST!*

**Railroads have accumulated 30,000 car-months of service with R-S JOURNAL STOPS — and have averaged better than 6,000,000 car-miles per set-out**

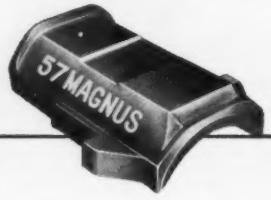
MAGNUS R-S Journal Stops, bolted to the inside of the box, on either side of the journal, positively prevent excessive axle displacement even under the severest road or switching impacts. All elements of the bearing assembly are kept *in place, all the time!* You maintain a constant hydrodynamic oil film that guarantees optimum journal bearing performance.

Magnus R-S Journal Stops are now installed on more than 2,600 cars which have accumulated more than 30,000 car months of service. In this time there have been only six road failures. That's equivalent to better than 6,000,000 car miles between set-outs. You can't beat that kind of performance with any other type of freight car bearing — or any other journal bearing device.

For full information on R-S Journal Stops, write to Magnus Metal Corporation, 111 Broadway, New York 6; or 80 E. Jackson Blvd., Chicago 4.

**MAGNUS**

# Solid Bearings




**MAGNUS METAL CORPORATION** *Subsidiary of* **NATIONAL LEAD COMPANY**

RAILWAY AGE
The Industry's Newsweekly

# Do RRs 'Fumble' Press Relations?

**Newspaper men tell public relations officers how to get better press treatment; Faricy lauds publicists' role.**

The men whose job it is to tell "the railroad story" moved to the listeners' side of the speaker's rostrum June 6, to find out how they could do a better job.

Painfully aware of its own and the industry's problems, the Railroad Public Relations Association exposed itself at its annual meeting in Edgewater Park, Miss., to sometimes scathing criticism from within and without, took another penetrating look at its objectives, and had new life breathed into its methods.

**High spot** of the program came when four outspoken New York City financial news reporters sat down to tell the association how, in many respects, railroads are muffing the chance to tell their story to their best advantage. Surprised, and in some cases peeved, the public relations men took the rebuke well; they spent many an hour during later interludes in earnest conversation with the newsmen, explaining their own problems and building better relationships for the future.

Further pointed criticism of railroad public relations came from H. F. Hammond, executive secretary, Transportation Association of America, who told of railroad programs being stymied at Washington because they were marked by one-sided efforts such as the "small, select group" that drafted the Cabinet Report. He said railroads would achieve much more if they joined with other transportation groups in seeking objectives that all parties could agree on.

**On the plus side,** the railroad "PR" men got a big boost from AAR President W. T. Faricy. In a prepared address, he said that "no one is going to have a greater part" in shaping history's evaluation of railroads than the industry's publicists.

Gilbert H. Kneiss, assistant to president, Western Pacific, and president of the RPRA, defined the theme of the meeting, "Clear Board for Public Relations." This clear board, he said, "may be thought of as not too far along on a still ascending grade that stretches out in front of us about as far as we can see . . . I think the job of railroad public relations is going to get tougher—not easier."

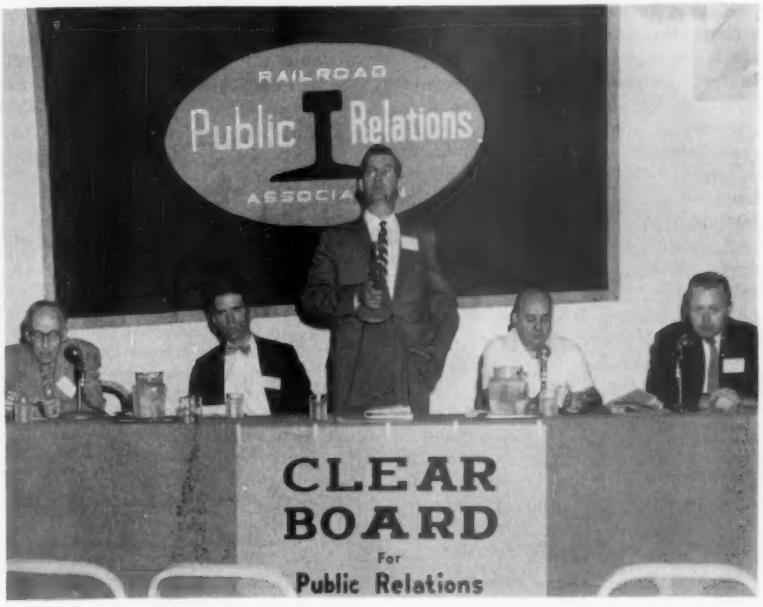
"Our lack of success to date" to convince the public of the validity of railroad protests against taxes, subsidized competition and the right to compete, he said, shows that "new public relations techniques" are vitally needed.

With the "natural" PR tools of steam locomotion and passenger service dwindling, he pointed out, railroad public relations must be marked by imagination, cooperation (relegating intra-industry competition to second place), audacity and hard work.

Armed with what was later called a "needle about five inches long," the financial writers made a rough case for the publicists. The panel included R. E. Bedingfield, New York Times; Joseph D'Aleo, New York World Telegram & Sun; Robert Shortal, United Press; and F. B. Stauffer, New York Herald Tribune.

**A basic point made** was that, in their opinion, railroads had for too long spent too much time bemoaning their hapless fortunes and not enough time stressing their importance and their progressive accomplishments. With such a positive approach, they contended, railroads could hope to persuade the public that they truly deserve a better break.

They challenged the wisdom of railroads' preferring to state their cases before financial analysts, rather than to newspaper reporters—thus




**TABLES TURNED,** panel of newsmen is introduced by E. C. Schafer, Union Pacific publicist, before stinging analysis of railroad public relations. Left to right, Herald Tribune's Stauffer, Times' Bedingfield, Telegram's D'Aleo, and United Press Associations' Shortal.

## 'Brainstorming' Added to Railroad Lexicon

"Brainstorming," an old term dignified by a meaning that pictures intellectual bombardment with free-wheeling ideas, won unexpected prominence at the "PR" men's meeting.

Tossed into the proceedings early by a college president, it nudged into the railroad jargon at later formal sessions and impromptu discussions.

It's a newly popular public relations technique to draw out a sweeping range of ideas from persons who might otherwise never offer a creative suggestion. It involves a personnel meeting of workable size in which the group tries to "overpower" problems through use of spontaneous, uninhibited ideas.

The theory is that if each individual can be liberated from normal reticence and fear of what the boss will think he will contribute something—even if his idea only stimulates a chain reaction leading to a solution.

How effective this can be was demonstrated by President J. Donald Phillips of Hillsdale [Mich.] College. He had the publicists "brainstorm" the problem of how to "build a better blackboard eraser"—with some rather startling results.

Mr. Phillips led up to this by telling the association he has the "notion that too often our biggest public relations job is not with the public but within our own industry—and sometimes within our own public relations department."

"People care only when they share," he rhymed. "They are loyal only to those things they help to create or improve." The individual, he contended, must be dignified if you are to win his "emotional loyalty."

Spelling this out, the educator said the employee must feel he's wanted and that he can help to set, as well as achieve, goals.

Mr. Phillips suggested, for example, that a job description should not limit a man's duties but should be projected to outline the end product to which the job contributes.

## Shortcake Plus Cheesecake

The "Georgian," Chicago-Atlanta streamliner of the Chicago & Eastern Illinois, recently celebrated its ninth anniversary. Chicago model Julie Jarrett is serving the Georgia peach birthday shortcake to (left to right), L. W. Henson, dining car steward; J. C. Byers, Pullman conductor; and John Higgins, passenger agent.

getting their story in "market letters" rather than in the daily press. They urged the PR men to make their executives more accessible to reporters, suggesting it could be the public relations man's role to draw out an officer hesitant to meet reporters.

They contended that there are ample day-to-day railroad developments worthy of newspaper coverage which don't get into the papers because the public relations men and railroad officers do not make the effort to reach the men who write the stories—sharply contrasted with the aggressive efforts of the airlines. They agreed, in answer to questions, that railroad press relations were better than those of the truckers—but said that the truckers did a better job of political lobbying.

Railroads must get the public to make common cause with them, said William H. Schmidt, Jr., director of public relations, Baltimore & Ohio, (until recently, executive editor, Railway Age). He said that "the devil that we fight" is the size, age and impersonal nature of the railroad industry.

It's peculiar, Mr. Schmidt declared, that the "sturdy independence" so much admired in the American tradition has never won railroads the public "sympathy" that airlines and truckers and others get in communities that point with pride to "our [subsidy-built] airport" or river dock or super-highway.

"Grass roots" public relations is the basis for the Southern Pacific's novel "marriage" of public relations and passenger department personnel, according to James G. Shea, the SP's general public relations manager. He said the idea germinated from a decision that the road needed personnel who were known in local communities to be "on the spot" for single public relations assignments and to provide a continuing "tailor-made approach" to SP community relations.

Admitting that he didn't know if the arrangement would work on any other railroad, Mr. Shea said "it is working for us." He expects the set-up to improve as it matures. As examples of success to date, he said that the SP law department, which had rarely worked with the public relations people, now consults with them as to the "timing, strategy and even the opening statement" of its cases. The freight traffic manager now "knows the importance of what we are trying to produce," while operating people are making more cooperative use of business cars to further public relations objectives.

Commenting on the SP organization, R. C. Champlin, vice-president, public relations, Pennsylvania, said that it might be possible on other roads than the SP to accomplish much of what has been done there, without formally combining the two departments. It seems like a good way to get more use from the passenger agent, he said. "Nothing is quite so powerful," Mr. Champlin continued, "as person to person contact." But it's been one of the "least employed" public relations techniques and "probably is one of the greatest areas of improvement."

**New officers** of the association are: President, George M. Crowson, assistant to president, Illinois Central; regional vice-presidents—J. P. Reinhold, assistant to president, Santa Fe, H. F. Skidmore, director of public relations, Chesapeake & Ohio, and O. J. Murry, assistant to president, Central of Georgia. James D. Parel, manager, agricultural relations, AAR, was reelected secretary.

### *PRR 'AEROTRAIN' TO BE RETURNED TO GM*

**The General Motors "Aerotrain" which has been making daily round trips between Philadelphia and Pittsburgh, on the Pennsylvania, will be returned to General Motors June 30, according to an announcement by Walter J. Patchell, vice-president, research and development, of that railroad.**

**"We have now had over a year's experience with the passenger acceptance and operating efficiency of this new type of equipment, which will be invaluable to us in our continuing efforts to develop the trains of tomorrow," Mr. Patchell said. "The Electro-Motive Division of General Motors has made a significant and substantial contribution to the railroad industry by building the Aerotrains and leasing them to several railroads for operation in various types of passenger service."**

# Demurrage Charges Will Rise July 1

**ICC-approved increases will make rates $4 per car per day for first four days beyond free time, and $8 a day thereafter; new charges will be less than the railroads sought.**

Railroads are planning to make July 1 the effective date of the demurrage-rate increases approved by the Interstate Commerce Commission. For that purpose, the carriers last week obtained necessary relief from commission tariff regulations to permit publication of the new demurrage rates and rules on 10-day notice.

July 1 will be 10 months after the day (September 1, 1956), on which the railroads originally proposed to make the increases effective. That tariff, which will now be canceled and the approved adjustment embodied in new schedules, was suspended by the commission until March 31, and the railroads then voluntarily postponed the effective date until June 30.

The approved increases will make demurrage rates $4 per car per day for the first four days beyond free time, and $8 per day thereafter. As to Saturdays, Sundays and holidays, they will be included in computing charges, on both straight-plan and average-agreement cars, after a car has been held four working days, or two such days beyond the free time.

**The commission's decision,** a May 27 report in I&S No. 6646, gave something to both sides. While the rate increases will be less than the railroads sought, the carriers got what they wanted in modified rules for counting Saturdays, Sundays and holidays in computation of detention time.

At the same time, the commission refused to approve that part of the railroad proposal which would have changed another rule and thus reduced, from four to two, the number of credits usable to offset debits under average agreements. The National Industrial Traffic League said such a change would have confronted shippers with demurrage-cost increases running above 200%.

Present demurrage rates are $3 per car per day for the first four days after expiration of free time, and $6 per day thereafter. The railroads proposed increases to $4 per day for the first two days, $7 per day for the next two days, and $10 for each subsequent day.

As to Saturdays, Sundays and holidays, they are now excluded altogether in the computation of detention time on straight-plan cars. They are included in computations under average agreements if they occur after a car has been held six working days, or four such days beyond free time.

These rates and rules have been in effect since 1949, although commission service orders have changed them temporarily in times of car shortage. The commission cited figures showing that the percentage of detention was "lowest in recent years" during periods when higher charges were required by the service orders.

"The primary purpose of demurrage regulations," the report also said, "is to promote equipment efficiency by penalizing the undue detention of cars. It has long been recognized that demurrage charges are not to be regarded as a source of carrier revenue. . . . No shipper, however, has an inherent right to detain cars beyond free time and thus prevent their use by other shippers for the transportation of goods in the general public interest."

The commission went on to refer to presentations in the case urging that embargoes and service orders should be employed instead of high demurrage charges to speed the release of cars. It rejected the proposals with this comment:

"Such methods are not satisfactory or proper substitutes for reasonable demurrage rules and charges applicable generally throughout the country. It is important to bear in mind that, except in extraordinary circumstances, recognized by appropriate tariff provisions for exemption, car detention is solely within the control of the shippers. Those who release cars within free time will not be adversely affected by any changes in demurrage regulations not affecting established free time. On the other hand, to the extent that changes influence the more prompt release of equipment now being detained beyond free time, the entire shipping public will benefit."

Figures in the report indicated that something like 15% of the cars placed for loading or unloading are detained beyond free time. The figures came out of a study covering conditions at 14 representative points during the first six months of 1956. Nearly 1½ million cars were involved. Average-agreement cars held beyond free time were 15.19% of the total of such cars, and the detention percentage for straight-plan cars was 14.03. These results are "representative of the situation prevailing generally."

Meanwhile, the commission sustained the hearing examiner's ruling which excluded protestant evidence

*(Continued on page 14)*


## Western RRs Observe 'Invest in America Week'

The fraternization of General Motors locomotives pictured above occurred recently in Los Angeles when the Southern Pacific, the Union Pacific and the Santa Fe teamed up to observe "Invest in America Week."

# AIR CONDITIONING SYSTEMS by "Safety" LEAD THE FIELD IN PERFORMANCE.....

The efficient, dependable performance of an Air Conditioning System depends on its motors and related controls for continuity of service . . .

**"SAFETY" MOTORS** are an integral part of all "Safety" Air Conditioning components. They are designed specifically for railroad service . . . to insure maximum efficiency with low wattage consumption . . . thus differ materially from commercial equipment designed for general uses . . .

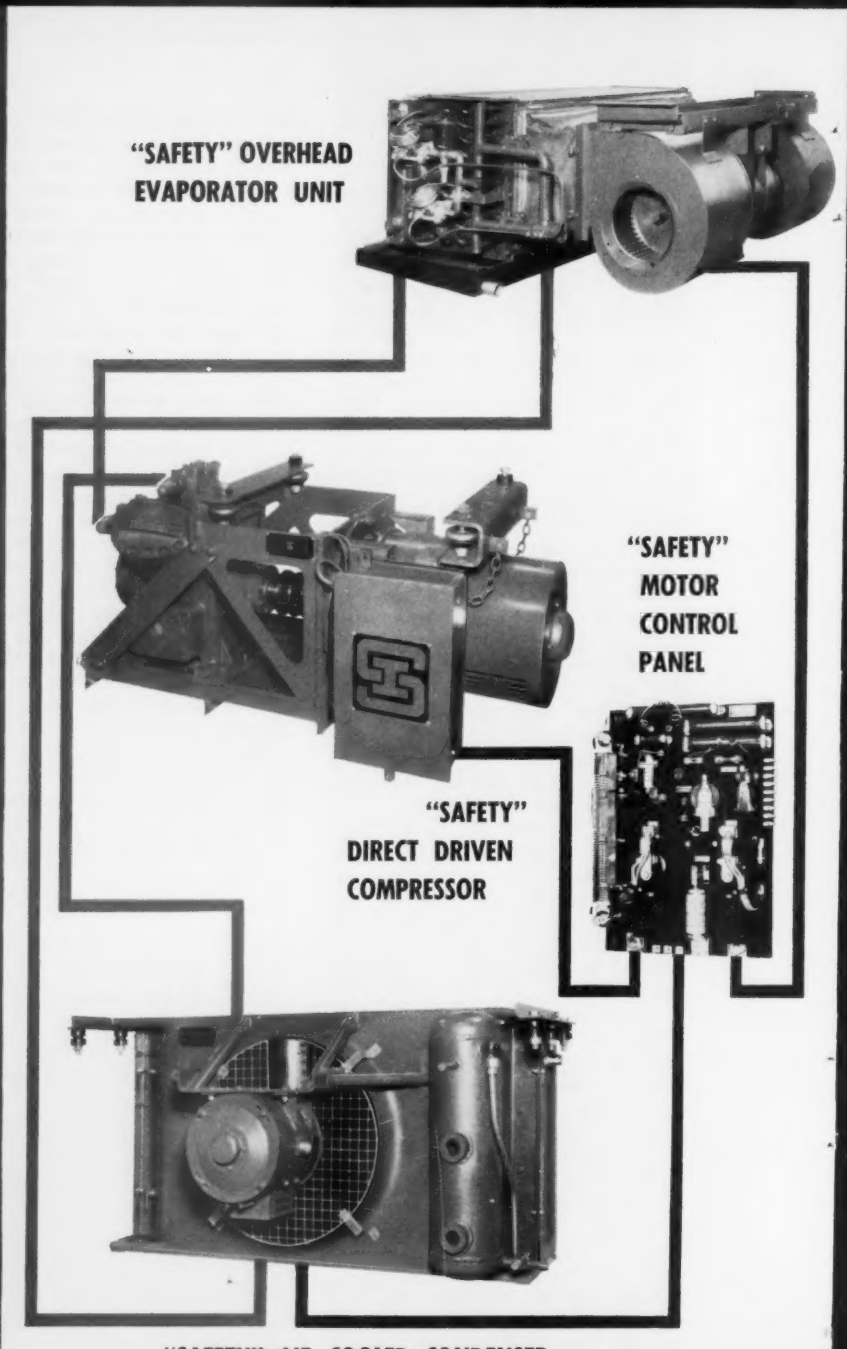
**"SAFETY" CONTROL PANELS . . .** compact and simplified . . . assure ideal compressor-motor starting and running performance.

A complete **AIR CONDITIONING SYSTEM . . . by "SAFETY" . . .** including

- **direct driven compressor**
- **evaporative or air-cooled condenser**
- **overhead evaporator unit**
- **motor control panel**

assures the railroad of "Safety's" undivided responsibility for the proper performance of the entire air conditioning system.

*In addition to standard Air Conditioning equipment, SAFETY INDUSTRIES has a complete line of ceiling and package-type air conditioners designed for special types of cars and conditions. May we send further information?*




**SAFETY INDUSTRIES, INC.**

FORMERLY THE SAFETY CAR HEATING & LIGHTING COMPANY, INC.

NEW YORK · CHICAGO · PHILADELPHIA · RICHMOND · ST. LOUIS · SAN FRANCISCO · NEW HAVEN · MONTREAL

"SAFETY" PRODUCTS INCLUDE: Air-Conditioning Equipment • Genemotors • Generators • Fans • Regulators • Blower Units Lighting Fixtures • Switchboards • Luggage Racks • Motor Alternators • Dynamotors • Motor Generators • Dual Voltage MG Sets

# MARKET OUTLOOK THIS WEEK

## Week's Loadings 6.8% Below Last Year's

**Loadings of revenue freight in the week ended June 8 totaled 733,477 cars, the Association of American Railroads announced on June 13. This was an increase of 61,692 cars, or 9.2% compared with the previous week; a decrease of 53,598 cars, or 6.8%, compared with the corresponding week last year; and a decrease of 48,461 cars, or 6.2%, compared with the equivalent 1955 week.**

**Loadings of revenue freight for the week ended June 1 totaled 671,785 cars; the summary, compiled by the Car Service Division, AAR, follows:**

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, June 1

| District | 1957 | 1956 | 1955 |
|---|---|---|---|
| Eastern | 102,743 | 109,739 | 109,929 |
| Alleghany | 133,253 | 140,256 | 135,774 |
| Pocahontas | 59,661 | 62,278 | 58,655 |
| Southern | 113,629 | 122,921 | 121,489 |
| Northwestern | 109,718 | 118,483 | 116,319 |
| Central Western | 104,893 | 111,230 | 112,650 |
| Southwestern | 47,888 | 54,302 | 54,535 |
| Total Western Districts | 262,499 | 284,015 | 283,504 |
| Total All Roads | 671,785 | 719,209 | 709,351 |
| Commodities: | | | |
| Grain and grain products | 43,232 | 46,261 | 43,971 |
| Livestock | 4,388 | 5,654 | 5,567 |
| Coal | 126,147 | 121,899 | 120,836 |
| Coke | 10,035 | 12,658 | 11,145 |
| Forest Products | 37,192 | 43,953 | 41,850 |
| Ore | 84,391 | 84,593 | 77,621 |
| Merchandise l.c.l. | 48,529 | 52,124 | 56,766 |
| Miscellaneous | 317,871 | 352,067 | 351,595 |
| June 1 | 671,785 | 719,209 | 709,351 |
| May 25 | 722,903 | 788,254 | 785,589 |
| May 18 | 722,521 | 778,997 | 769,879 |
| May 11 | 723,392 | 777,606 | 752,645 |
| May 4 | 718,924 | 770,558 | 736,904 |
| Cumulative total, 22 weeks | 14,882,795 | 15,785,672 | 14,827,931 |

**IN CANADA.—Carloadings for the ten-day period ended May 31 totaled 132,142 cars, compared with 72,907 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.**

| | Revenue Cars Loaded | Total Cars Rec'd from Connections |
|---|---|---|
| Totals for Canada: | | |
| May 31, 1957 | 132,142 | 46,747 |
| May 31, 1956 | 145,402 | 51,258 |
| Cumulative Totals: | | |
| May 31, 1957 | 1,587,070 | 711,130 |
| May 31, 1956 | 1,703,957 | 749,324 |

## New Equipment

### FREIGHT-TRAIN CARS

► *Consolidated of Cuba.*—Ordered 250 50-ton box cars, ACF Industries, for delivery in fourth quarter 1957.

► *Florida East Coast.*—Ordered six 50-ton flat cars, Thrall Car; unit cost approximately $8,100; delivery scheduled for August.

► *Grand Trunk Western.*—Ordered 15 cabooses, International Railway Car; unit cost $14,687; delivery expected fourth quarter 1957.

► *Kaiser Aluminum & Chemical Corp.*—Ordered 24 additional gondola cars with all-welded aluminum bodies, Pullman-Standard; equipment will supplement present fleet of 35 such cars used by Kaiser Bauxite Company, wholly owned Kaiser Aluminum subsidiary, to haul bauxite on Jamaica, BWI; delivery of cars scheduled to begin in October.

► *Magor Car Corp.*—Received order from Venezuelan railroad for 35 50-ton hopper cars, five 40-ton flat cars and three 40-ton box cars.

► *National of Mexico.*—Ordered 100 cabooses, ACF Industries, for delivery in first quarter 1958.

► *Norfolk & Western.*—Ordered 15 cabooses, International Railway Car, for delivery first quarter 1958.

► *Sacramento Northern.*—Ordered 20 70-ton drop-bottom gondola cars, ACF Industries; delivery scheduled for first quarter 1958.

► *Tidewater Southern.*—Ordered 10 50-ft insulated DF box cars equipped with roller bearings, Pacific Car & Foundry, and five 70-ton drop-bottom gondola cars, ACF Industries; delivery of box cars scheduled for fourth quarter 1957, and of gondola cars for first quarter 1958.

► *Union Pacific.*—Ordered 50 tank cars, General American.

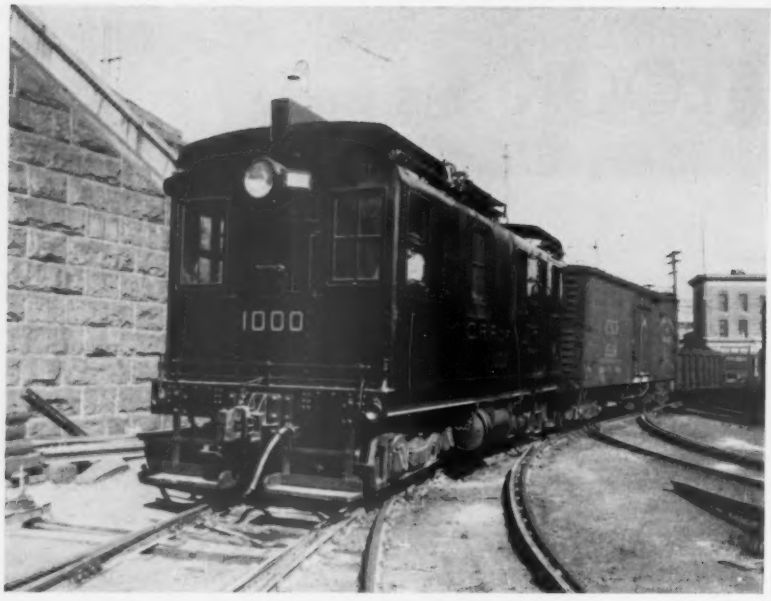
### PASSENGER-TRAIN CARS

► *Canadian National.*—Ordered three rail diesel cars (one RDC-1, two RDC-3s), Budd Company; estimated cost $540,000.

► *Canadian Pacific.*—Ordered one rail diesel car (RDC-1), Budd Company; delivery expected this month.

## New Facilities

► *Detroit & Toledo Shore Line.*—Awarded to A. Bentley & Sons Co., Toledo, Ohio, general contract for construction of new office building in Lang yard, Toledo; estimated cost of two-story building, scheduled for completion by next November 1, is $270,000.




## First Diesel Bought by U.S. Railroad Is Retired

Jersey Central's locomotive No. 1000, first diesel-electric locomotive owned by any U. S. railroad, made its final run on June 13. The 300-hp unit—built by Ingersoll-Rand, General Electric and Alco Products—spent most of its active life switching cars in the railroad's Bronx Terminal yard in New York City. Last week's final trip for No. 1000 was at the head of a passenger train, hauling newsmen from Jersey City, N. J., to Elizabethport, and return. The locomotive shortly will go on permanent display in the Baltimore & Ohio's Transportation Museum at Baltimore. Photograph shows No. 1000 in the Bronx Terminal yard shortly after its October 20, 1925, delivery to the Jersey Central.

*(Continued from page 11)*
comparing the rates and rules in issue with demurrage rates and rules applicable at ports and mines and published in separate tariffs. Here the report said: "We have recognized for many years, and in specific instances have found lawful, the more liberal demurrage rules and charges which the respondents have established and maintain on export, import, coastwise, and mine traffic, based on material differences in transportation conditions."

# RR Chiefs Differ on Passenger Future

"We'll never be out of the passenger business," Texas & Pacific President W. G. Vollmer said June 12 at Dallas after hearing reports that two other railroad presidents thought they'd eventually be in all-freight service.

Readily conceding that the "private automobile has put rail passenger business on the bum" and that "very high class" air and bus service made for tough competition, Mr. Vollmer declared he certainly is not pessimistic.

Southern Pacific President D. J. Russell and Katy President W. N. Deramus III said at a press conference June 11 that the private automobile and subsidized operations of their competitors doomed rail passenger trains to oblivion.

Mr. Russell said he would like to see all transport modes competing on even footing and that he thought railroads should try to have the situation rectified. He seemed to shy away from the idea gaining apparent tolerance in some railroad quarters that railroads should seek a share of the subsidy pie.

Mr. Deramus saying he agreed with all Mr. Russell said, commented that he thinks rail passenger service is a "lost cause."

Mr. Vollmer, however, insisted that the "people need passenger service." He said railroads should offer the best service possible: "the finest cars, the cleanest cars, the most courteous employees, the cleanest uniforms and the best possible dining car service." He said a railroad must do its best to meet the competition and he asserted they should "keep it high class or get out" of the passenger business altogether and risk "outraging" the public.

If a railroad can't profit in passenger operations, Mr. Vollmer stated, "then you should take your losses on the chin and get out and get yourself some more freight business."

## Would Let DL&W Keep NKP Stock if Trusteed

Examiners Jerome K. Lyle and Robert Romero have advised the Interstate Commerce Commission to let the Lackawanna retain ownership of its Nickel Plate stock holdings, provided the stock is placed in a tight voting trust. On that basis, the examiners would have the commission discontinue its investigation of whether the Lackawanna acquired and is holding the stock in violation of the Interstate Commerce Act or Clayton Antitrust Act.

The advice came in the examiners' proposed report on the commission investigation. Lackawanna holdings amount to 628,722 shares of Nickel Plate common, 15.27% of the total.

Proceedings at the commission got under way in 1952, when Lackawanna applied for authority to acquire such control of Nickel Plate as might result from election by it of two members of the NKP board. At the same time, Lackawanna asked the commission to dismiss the application on the jurisdictional ground that the proposed arrangement would not constitute an acquisition of control within the meaning of section 5(2) and thus would not require commission approval. It also sought unsuccessfully to withdraw the application. Among several interveners in opposition to the proposal was the Nickel Plate.

The commission's Division 4, in a report dated October 7, 1955, refused to dismiss the application and ordered the investigation. Meanwhile, Lackawanna set up, for its NKP stock, voting-trust arrangements under which the voting trustee would vote independently upon the election of NKP directors, and on all other matters in accordance with Lackawanna's written instructions. Approval of those arrangements is now sought by Lackawanna.

The examiners recommend that the commission require modification of the voting trust to provide that Lackawanna shall not acquire additional Nickel Plate shares without prior ap-

proval of the commission; that the trustee be empowered to vote the NKP stock for all purposes without suggestion from the Lackawanna; that Lackawanna shall not remove the trustee; and that the trustee shall not release any of the stock without prior commission approval.

Trusteeing of the stock under such arrangements would constitute divesture, the examiners said. If it is done, they recommend discontinuance of the investigation. "It would not be in the public interest," they say, "to require Lackawanna to forego the substantial earnings received by it on Nickel Plate stock, or to be faced with the necessity of paying several million dollars of capital-gains taxes, should it be required to sell the stock."

## Chain Store League Raps Reduction in LCL Services

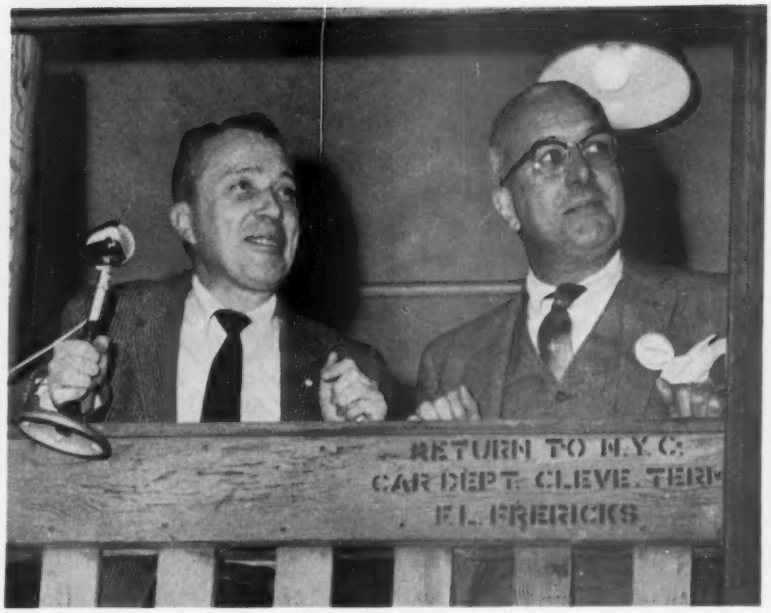
Chicago & North Western's elimination of LCL pick-up and delivery came under fire at the annual meeting of the Chain Store Traffic League in New Orleans. League members claimed inconvenience and additional cost resulted from the C&NW action. Members also commented that they did not feel "justified" in continuing car-load routings on carriers which "do not provide adequate LCL service."

In originally announcing its decision to drop pick-up and delivery service, C&NW said expenses for the service totaled more than $1,500,000 in 1956 and represented an unjustifiable burden on a class of traffic which has been declining as a revenue producer (Railway Age, Mar. 11, p. 14).

## Two Crewmen's Damage Claims Denied by Judge

Crewmen's damage claims against the Santa Fe totaling $420,000 have been denied in a ruling handed down in Federal court, Los Angeles. In making the decision, Judge Leon Yankwich ruled that an engineman's momentary "blackout," not failure of air brakes, caused derailment of an AT&SF Los Angeles-San Diego train on January 22, 1956 (Railway Age, Jan. 30, 1956, p. 16, and Mar. 26, p. 13).

Engineman Frank B. Parish and Fireman Homer Smith had claimed the railroad was at fault. Parish sought $320,000 in damages; Smith asked $100,000. The railroad had admitted liability as to passengers, but not as to employees, in connection with the accident.




### Box Car Serves as Broadcasting 'Studio'

More than 800 financial analysts recently made a 30-mile tour of the Cleveland, Ohio, area aboard a "Security Analysts Special" sponsored by the Cleveland Railroad Community Committee. Warren Guthrie (left), chairman of the department of speech at Western Reserve University and a prominent Ohio newscaster, and H. M. Phillips, manager of the Pennsylvania's Lake region and chairman of the committee, are shown peering out at the passing scene from a box car broadcasting "studio" on the train.

# Conductors Accept 'Pattern' Settlement

Agreement on a 26½-cent "package" pay increase over a three-year period has ended the wage dispute between the nation's major railroads and the Order of Railway Conductors & Brakemen.

The conductors will receive a 12½-cent increase retroactive to November 1, 1956, and further increases of 7 cents each on November 1, 1957, and November 1, 1958. The agreement stipulates that no other increases or decreases can be made before November 1, 1959. It does include an escalator clause providing for raises or reductions of one cent an hour for each one-half point change in the Bureau of Labor Statistics' consumer price index; cost-of-living adjustments, if any, are to be made on six-month periods, beginning May 1, 1957. An index level of 117.1 is to be the base for the clause.

The agreement covers approximately 70 major railroads and about 20,000 employees. Negotiations had been in progress since last October. The agreement follows the pattern accepted previously by unions representing about 94% of railroad employees.

# Passenger Service Costs to Be Studied

An independent study of the "avoidable costs" of passenger-train service will be undertaken by the Aeronautical Research Foundation of Cambridge, Mass.

A research grant of $25,000 from the Association of American Railroads will pay for the study. The grant was accepted by the foundation on the explicit condition, and the expressed desire of the AAR, that the study be wholly independent and objective.

Under terms of the grant, the foundation's research group will have full freedom to explore the question of "avoidable" passenger-train service costs in whatever manner it deems most desirable, and to arrive at findings of fact and conclusions. The study will be performed primarily by consultants to the foundation experienced in cost finding.

Study results, to be published by the foundation, will be made available

to all persons interested in passenger transportation, including federal and state regulatory agencies. It is expected results of the study will be published next September.

The foundation, a non-profit organization founded in 1947 to facilitate group research by members of the faculties of Harvard University and the Massachusetts Institute of Technology, is not connected with either institution. In recent years, it has performed several research studies, primarily for government agencies, of aviation, transportation and logistics.

## Santa Fe-PRR Control Of TP&W Authorized

The Interstate Commerce Commission has authorized the Santa Fe and Pennsylvania to acquire control of the Toledo, Peoria & Western through ownership of capital stock. The commission order will permit the acquisition to become effective July 16.

The same decision, by the commission's Division 4 in Finance Docket No. 18991, denied the request of the Rock Island and Nickel Plate for authority to be included on an equal basis in the acquisition. It also dismissed the Minneapolis & St. Louis' application for authority to acquire control of the TP&W alone.

The commission's approval of Santa Fe-PRR control is subject to several conditions designed to insure maintenance of existing routes and the protection of employees who might be affected. The acquisition price is $135 per share (a total of $12,150,000) for the TP&W's 90,000 shares of capital stock, most of which is held by the estate of its former president, the late George P. McNear.

Mr. McNear was shot to death near his home in Peoria, Ill., on March 10, 1947, at a time when the road was in labor difficulties resulting from his fight against "featherbed" rules. He had been president of TP&W since 1927, and the commission's present report said that, under his guidance, the property "was built into a fine railroad."

Under the acquisition plan, Santa Fe will buy all of TP&W's capital stock. It will then sell 50% of such stock to the PRR's subsidiary, the Pennsylvania Company.

The TP&W has a 234-mile main line extending from Effner, on the Illinois-Indiana line, via Peoria, to western termini at Keokuk, Iowa, and Lomax, Ill. A 5-mile branch extends from Hamilton, Ill., to Warsaw. More than two-thirds of its revenue is derived from overhead traffic, and 70.7% of the cars it handled on that basis during the 12 months ended June 30, 1955, were interchanged with the Santa Fe and/or PRR.

The commission noted that Santa Fe and PRR had agreed to continue the TP&W as a separate carrier with responsible management located along its lines. Its 11-member board of directors will include its president, two officers of the Santa Fe, two officers of the PRR, and six persons not connected with any of the parties to the agreement.

Commenting on proposals of railroads which desired to participate in control of the TP&W, the commission had this to say: "We cannot decide these cases to the satisfaction of all participants. Our duty is to determine the pending matters on the basis of what is consistent with the public interest. . . Most of the interested parties favored continuation of TP&W in its present status, but the stockholders desire to sell, and without doubt they have that right. . ."

As to the proposal of the M&StL, the report said it "unequivocally contemplates disappearance" of TP&W as "an independent and neutral connection for the other 15 carriers with which it presently works." As to protection of interchange traffic under the approved acquisition plan, it had this to say:

"No greater protection could be afforded to carriers interchanging traffic with TP&W than to have ownership divided equally between the largest connecting carrier in the East and the largest one in the West. Under this built-in system of checks and balances, it is inconceivable for the Santa Fe to permit impairment of service or discriminatory solicitation with respect to Eastern connections, or the Pennsylvania with respect to Western ones."

Minneapolis & St. Louis officers indicated that steps will be taken immediately to contest the commission's ruling. A. W. Schroeder, M&StL president, said an appeal will be made to the full 11-man commission.

## First Freight Traffic Clinic Held in Hawaii

Approximately 250 persons attended Hawaii's first freight traffic clinic, held at Waikiki. Pictured above, receiving red carnation leis are (left to right): Parkman Sayward, vice-president, sales and traffic, Pacific Intermountain Express Company, L. E. Osborne, executive vice-president, California Manufacturers' Freight Association; and Malcolm W. Roper, vice-president, traffic, Western Pacific. Castle & Cooke, Ltd., and Matson Lines were co-sponsors of the Hawaii clinic.

## C&NW Trims Passenger Runs; Seeks Streamliners

The Chicago & North Western has put into effect Wisconsin and Illinois state commission orders permitting large reductions in passenger service. C&NW Chairman Ben W. Heineman announced that the road will move ahead as fast as it can toward the construction and purchase of two new streamliners.

The North Western promised the Wisconsin Public Service Commission

# NEW ESSOLUBE HD KEEPS ENGINES CLEANER LONGER... INCREASES POWER, REDUCES WEAR

New Essolube HD is a superior lubricating oil developed for gasoline and diesel engines of the types used in maintenance-of-way equipment. New Essolube HD contains one of the most effective detergent inhibitor additives ever used. It offers new low-temperature detergency *and* improved high-temperature detergency, plus improved oxidation stability and bearing corrosion resistance.

In extensive laboratory and field tests prior to its introduction, new Essolube HD *proved* its superior detergency properties. Under low-temperature conditions, Essolube HD markedly reduced sludge deposits. Under high-temperature conditions, piston varnish and top ring deposits were reduced to a new low. Such outstanding engine cleanliness results in *greater engine power, reduced wear, longer life.*

**NEW ESSOLUBE HD** is a versatile oil. You will save on inventory and handling by using it in all your maintenance-of-way equipment – both diesel and gasoline. But most important... there's no danger of using the *wrong* lubricant by mistake.

If you would like more specifics on new Essolube HD, call your local Esso office or write to Esso Standard Oil Company, Railroad Sales Div., 15 West 51st St., New York 19, N. Y.

Esso

RAILROAD PRODUCTS


## RRs Help County Publicize Need for Taxes

Railroads serving Columbus, Ohio, recently presented their semiannual real estate taxes well in advance of the due date to help county officers publicize need for prompt tax payments by other industries. Check for $360,-026.20 was handed to County Treasurer Newton A. Thatcher (right), by members of the Railroad Community Committee of Columbus. Others, in the usual order, are A. J. Wilson, Baltimore & Ohio freight representative; J. W. Skeen, Norfolk & Western district freight agent; O. P. Varnell, Pennsylvania district sales manager; O. K. Lawson, Chesapeake & Ohio superintendent; and R. T. Martin, NYC district passenger sales manager.

it would buy a pair of new streamliners if its petition for discontinuance of secondary and branchline trains were granted. The commission, in its order dated May 10, required the road to do just that.

Current thinking among the road's officers is that the new trains will be used either as a replacement for the present "Twin Cities 400" or to make a total of three daily round trips between Chicago and Green Bay, Wis.

Just what equipment will be used hasn't yet been decided, Mr. Heineman said. The road is considering three types: "super-lightweight" equipment; Pullman-Standard's blueprinted-but-never-built "Train Z"; and high-capacity "high-level" cars incorporating features of both the road's double-deck suburban coaches and the Budd Company's "Hi-Level El Capitan."

Speaking of the North Western's showing that its passenger deficit consumed what revenue it derived from freight service, the Wisconsin commission said: "When an overall loss on combined operations occurs, the numerous controversies over the separation and assignment of operating expenses . . . by the ICC formula lose much of their significance."

# Monon Might Drop Passenger Service

President Warren W. Brown of the Monon said last week that his road may attempt to abandon its remaining passenger service.

"We are taking another look at the passenger business on our railroad," he told the Indianapolis Traffic Club. "We might stay in it. We might try to get out."

According to President Brown, Monon showed a net loss of $1,220,-000 on passenger service last year—with revenues totaling $1,830,000 and operating expenses totaling $3,050,-000. Including only direct out-of-pocket charges, he said, the road's loss amounted to $728,999; and even if all passenger service were eliminated, "we would still drop over $130,000 a year in terminal expenses which would have to be continued under existing contracts."

"If we try to get out," he said, "we'll try to convince you that it's because there is no other alternative to protect the earning power of the railroad. We'll try to convince you that Monon is subsidizing the convenience and necessity of every person who rides the railroad while that same person unjustly is being milked 24 hours a day for subsidies to give our competition a constantly growing ability to make us lose more and more money."

President Brown cited examples of his road's efforts to provide good passenger service—modern equipment converted from Army cars, dieselization, construction of modern stations and experiments in special fares, baseball excursions, student specials and other merchandising ventures. But he added: "There is . . . a limit to the lengths you can expect a common carrier to go in discharging its obligations in the face of the obstacles thrown in our path."

## April Gross Was Up, But Net Was Down

The $13 million drop, from last year, in April's estimated net income and net railway operating income of Class I railroads came despite an increase in gross revenue of more than $8-2/3 million.

As reported in Railway Age June 10, page 7, April's estimated net income of $61 million and the month's net railway operating income of $81 million, compared, respectively, with April 1956 figures of $74 million and $94 million. Gross for the 1957 month was $886.1 million, compared with April 1956's $877.4 million.

Twenty-three Class I roads failed to earn interest and rentals in this year's first four months. Rate of return for the 12 months ended with April averaged 3.86%, compared with 4.18% for the previous 12 months.

**CLASS I RAILROADS—UNITED STATES**

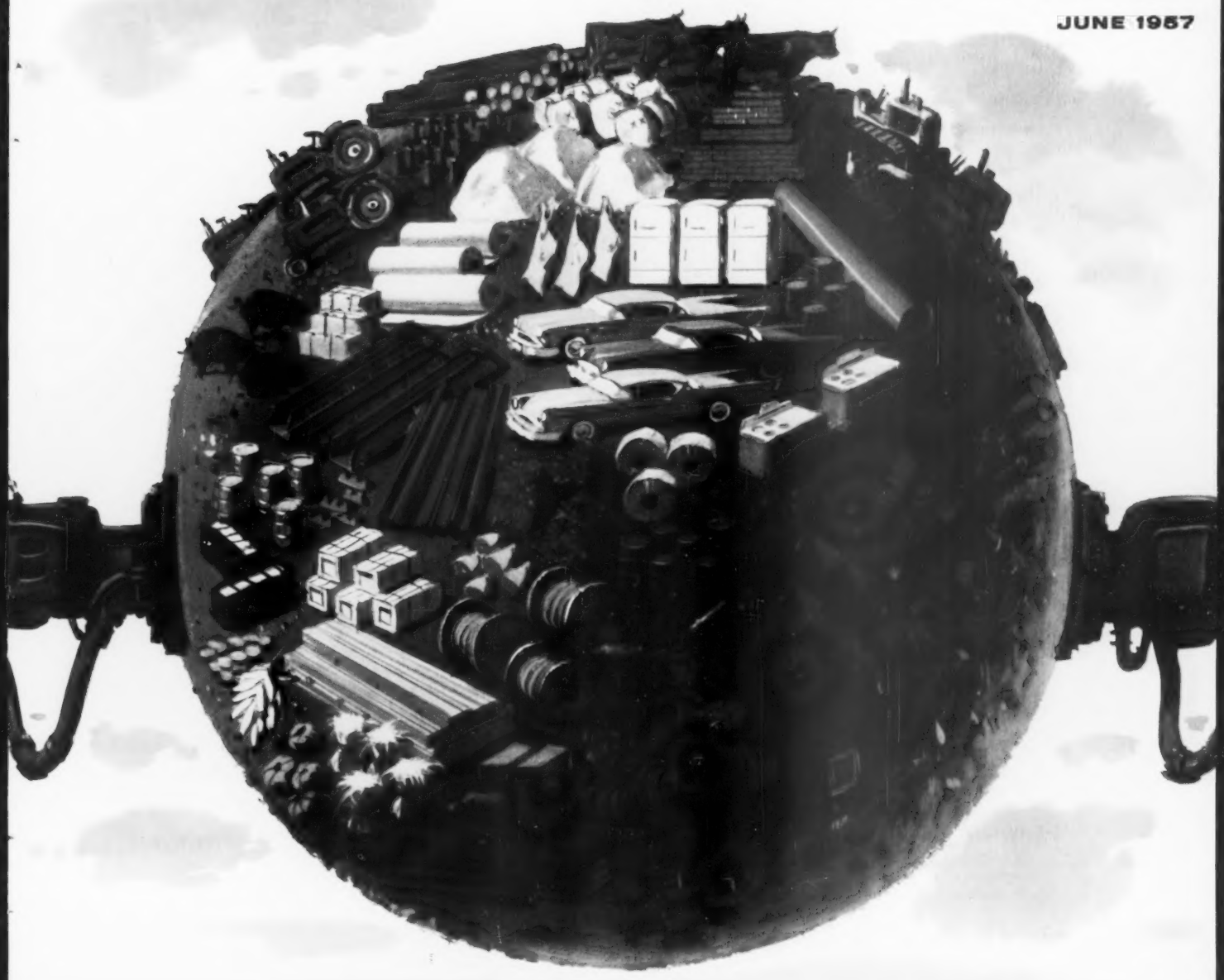
| | 1957 | 1956 |
|---|---|---|
| *Month of April* | | |
| Total operating revenues | $ 886,054,051 | $ 877,382,415 |
| Total operating expenses | 690,355,315 | 670,493,745 |
| Operating ratio—per cent | 77.91 | 76.42 |
| Taxes | 92,471,419 | 92,466,948 |
| Net railway operating income (Earnings before charges) | 81,201,633 | 94,318,788 |
| Net income, after charges (estimated) | 61,000,000 | 74,000,000 |
| *Four Months ended April* | | |
| Total operating revenues | $3,459,398,550 | $3,411,490,931 |
| Total operating expenses | 2,711,046,036 | 2,650,434,696 |
| Operating ratio—per cent | 78.37 | 77.69 |
| Taxes | 363,854,120 | 361,667,867 |
| Net railway operating income (Earnings before charges) | 295,474,543 | 313,697,804 |
| Net income, after charges (estimated) | 221,000,000 | 237,000,000 |

DEDICATED TO BETTER RAILROADING

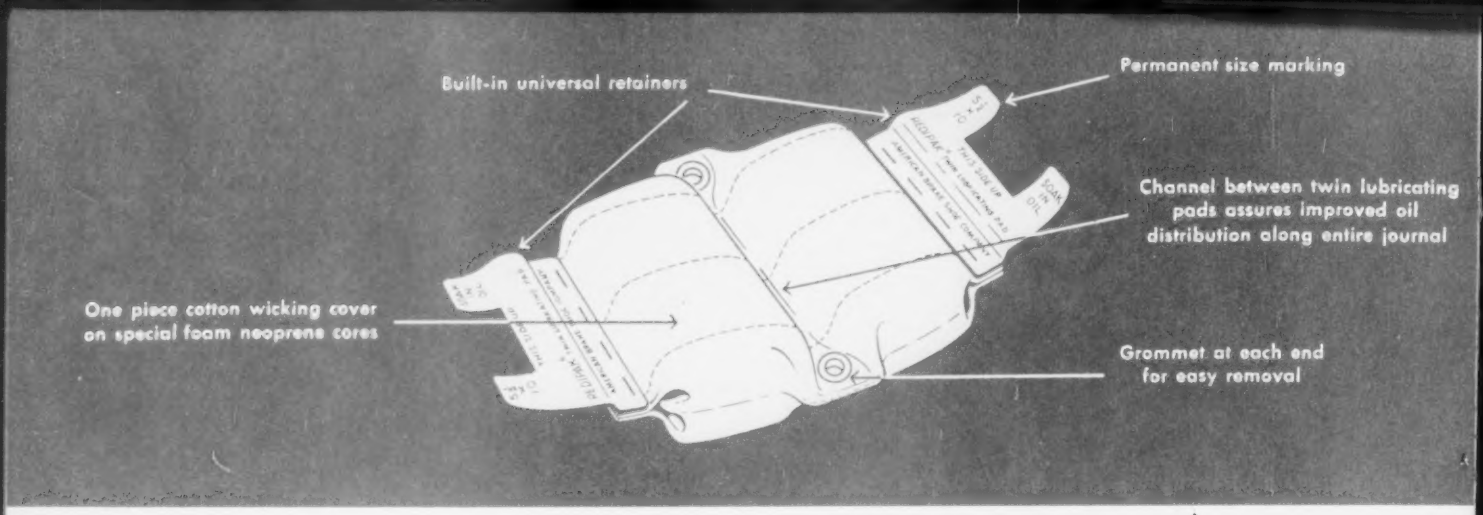
# The Ton-Mile

AMERICAN Brake Shoe COMPANY

JUNE 1957



**THE TONNAGE TRAVELS BY RAIL:** The abundance that is America rests upon the mighty world of railroading...which provides dependable tonnage transportation of vital products for home and industry.




# Redipak Twin=Positive Lubrication

*Redipak® Twin lubricating pads feature built-in universal retainers...fit all standard freight car journal boxes*

**Positive Shift Prevention!** Built-in fibre retainers prevent both endwise shift and shift from journal rotation. Pad resilience holds retainers against side of box, away from journal. One universal style for use in boxes with or without retaining ribs.

**Far Better Wicking Action!** New heavier cotton weave provides superior wicking action. Cover is woven as a single tube, eliminating all possible seams from the wicking path. The twin design also provides for equalization of the oil level in the journal box through a channel at the center.

**Improved Resilience!** Twin inserts are made of specially molded foam neoprene, compounded to our specifications. This provides excellent set resistance and oil absorption properties, and is designed for improved resilience.

**Superior Oil Distribution!** New twin design assures improved oil distribution along the entire length of the journal.

*Service on Leading Railroads Proves that*

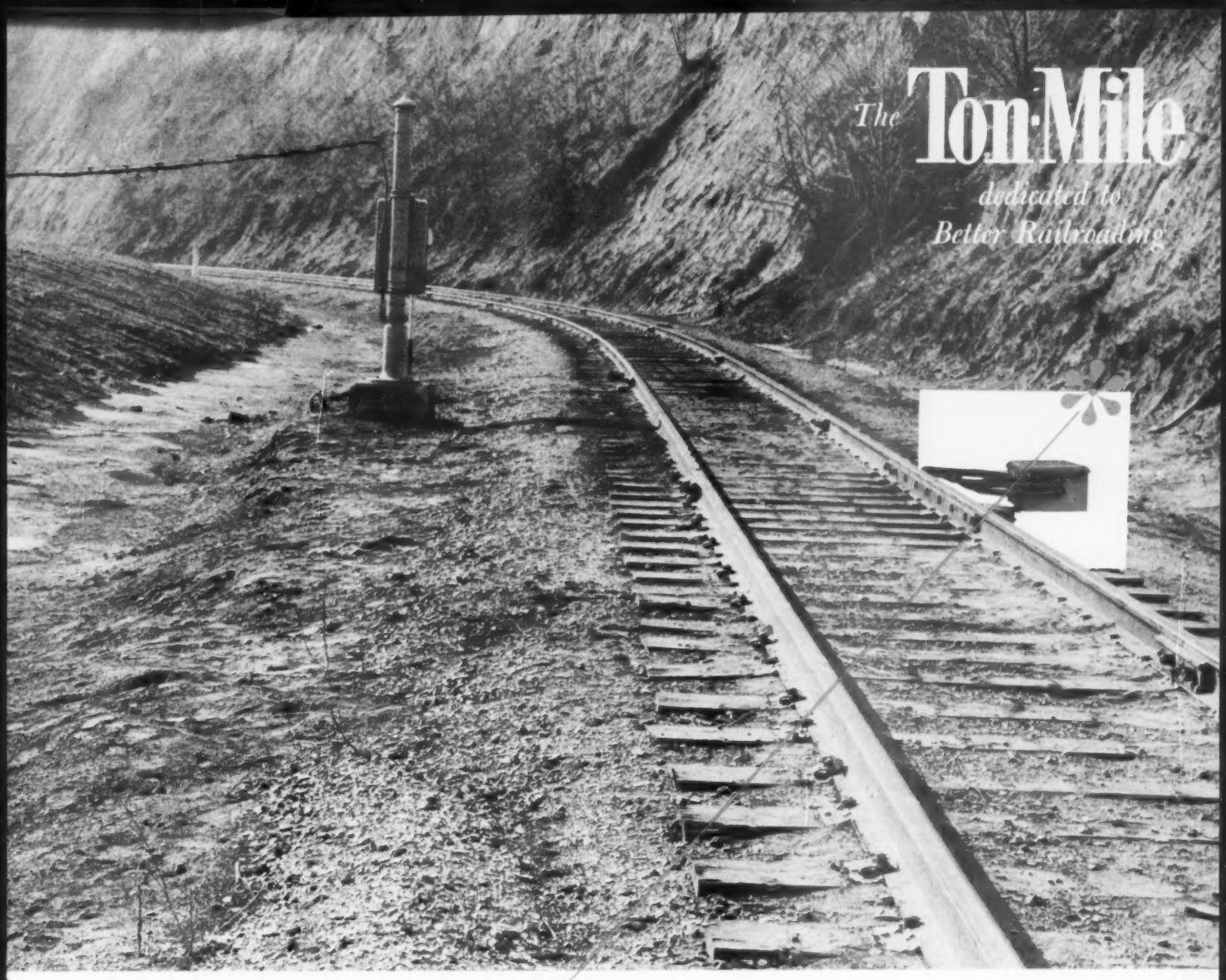
***REDIPAK® PADS REALLY LUBRICATE!***

**See How Much Oil Redipak Pads Soak Up!**

| SIZE | WEIGHT | |
|---|---|---|
| | Dry | Saturated |
| 4¼ x 8 | 1 lb. 5 oz. | 3 lb. |
| 5 x 9 | 1 lb. 10 oz. | 4 lb. |
| 5½ x 10 | 1 lb. 15 oz. | 5 lb. |
| 6 x 11 | 2 lb. 6 oz. | 6 lb. |
| 6½ x 12 | 2 lb. 12 oz. | 7 lb. |

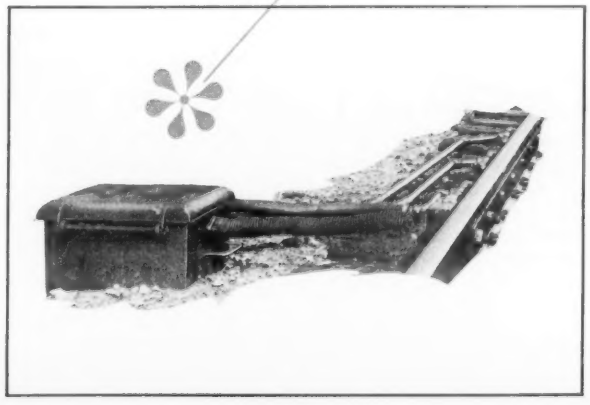
AMERICAN Brake Shoe COMPANY

RAILROAD PRODUCTS DIVISION 530 Fifth Avenue • New York 36, N. Y.




# Rail Lubrication *smoothes the way*

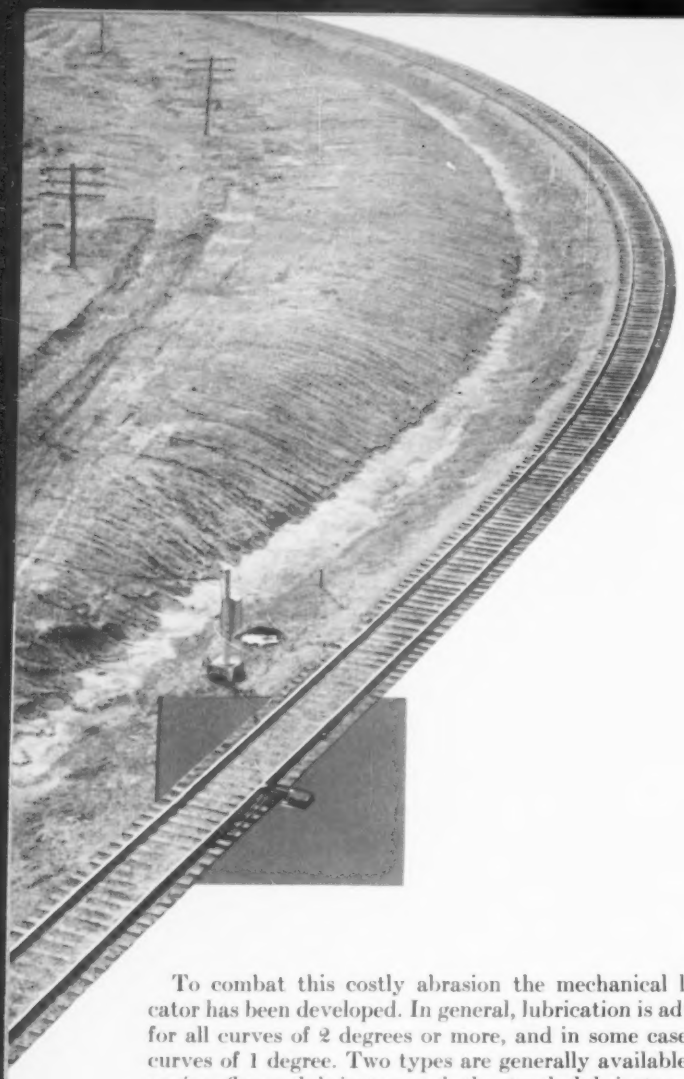
*...to better diesel operation by reducing wear on track and flanges and by increasing speeds and tonnage.*



In the early days of railroading, the track walker could often be seen carrying a pail of grease and a daub. He would perhaps pause and set down the heavy pail to glare at a half-mile of curved track glittering like a knife-edge in the afternoon sun. With a resigned shrug he would begin daubing grease on the gage side of the rail, stopping from time to time to grumble about the miles of track yet to be checked. But orders, he felt, were orders.

The daub and grease pail have been whisked from the trackwalker's hand by the onrushing modernization of today's railroads. The tedious, costly job of hand lubrication has been taken over largely by mechanical devices, such as Racor Lubricators, that around the clock, silently and automatically save wear on valuable rails and wheels . . . and often pay for themselves within a year.

Most railroads have begun programs to provide a steadily increasing amount of rail lubrication over the years. Unfortunately, many of these programs are inadequate. Dieselization, higher speeds, greater tonnages have tended to accelerate rail and flange wear on curves and abrasion of vital switch points and frogs in yards. Moreover, the useful life of modern wheels has been extended to the point where flange wear has become an important factor.



To combat this costly abrasion the mechanical lubricator has been developed. In general, lubrication is advised for all curves of 2 degrees or more, and in some cases for curves of 1 degree. Two types are generally available, the engine flange lubricator and the track lubricator. The purpose of both is to apply a line of grease along the gage side of the high rail on a curve.

The need for lubrication becomes apparent as one examines the tremendous forces at work in turning a moving car. It is the leading wheel on the outside of each truck that crowds the rail and bears the brunt of slewing the truck away from its straight-line motion. Good quality grease on the gage side of the outer rail will smooth the way and prevent the flange from chewing into raw metal. The problem is to put just the right amount there in the most economical way possible.

Tests have shown that the engine flange lubricator, which applies oil to the flanges on only the locomotive, is not as effective as the device that applies it correctly to the rail first and thus uses *every* wheel flange on the high side as an agent of distribution to obtain a longer, more even coverage.

The Racor Lubricator delivers grease through a series of slots in a long, thin line at the point of greatest contact between the flange and the rail. The Racor Lubricator's controlled, continuous application lubricates the *entire* circumference of the wheel and thus in turn, the greatest possible length of the gage side of the rail.

As the truck passes the lubricator, a spring-loaded adjustable plunger is depressed by the wheel treads, actuating three gear pumps in the reservoir, which smoothly force lubricant to the rail assembly. The reservoir has the exceptionally large capacity of 250 pounds, thereby reducing maintenance. The use of high carbon, heat treated or case-hardened parts makes for maintenance-free operation.

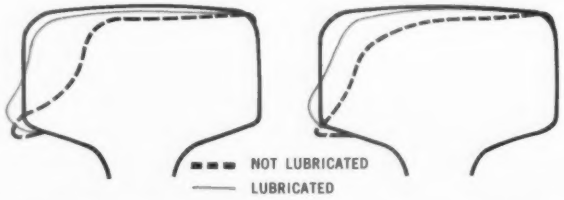
## *Diesels a factor in wear*

The modern diesel, with its fast, efficient operation and muscular hauling power, has revolutionized railroading within the past decade. But like any other advance, it has raised a few problems. One of these is that since the advent of dieselization there has been a noticeable increase in wear on track and wheel flanges. A number of facts account for this. First, the individual axle load on the diesel is higher than the steam locomotive, since there are fewer numbers of axles per diesel unit. Furthermore, with fewer wheels on the diesel unit and a tendency to slew or crab on curves, the lateral thrust is greater for each truck. Moreover, the diameter of the diesel wheel is much smaller than that of a steam unit's wheels, with the result that a smaller flange area—and consequently greater pressure—bears on the rail.

While it can be pointed out that some of these factors also apply to the car, it is a fact that a diesel unit will cause more wear than an individual car, as recent tests have brought out. Perhaps the major factor is the greater wheel base of the diesel truck, causing a greater angle between the flange of the lead wheel and the high rail in the curve. The leading wheel of the diesel will crowd the outer rail, causing severe abrasion in an unlubricated area, while the rear wheel flange will be away from the rail.

## *Speed exacts its penalties too*

There is a sharp hook hidden in the lure of the diesel's higher acceleration rate. In the past decade a rapid increase in rail and flange wear has been observed in what were formerly low-speed areas, such as ascending grades, preceeding and leaving sharp curves, and zones near station stops. Now that diesels can negotiate these areas at often twice the speed of steam powered trains, the wear on equipment has shot up critically. This has placed a perplexing problem in the laps of track designers. Faster speeds would seem to indicate higher superelevations. Yet many trains, especially those carrying heavy-tonnage mineral freight, continue to negotiate ascending curves at relatively




HOW RAIL CAN WEAR. *These contours were made at two representative points on a 4-degree curve that carried heavy traffic. New rail, after being in unlubricated service for 3¼ years had to be removed. Its worn area was approximately 1.19 square inches. It was then replaced by new rail of the same weight and section. This time the rail was lubricated. After an identical period the lubricated rail was examined and found to have worn only 0.26 square inches—despite the fact that it had carried even greater tonnages. The unlubricated rail had carried 62,567,715 gross tons during the 3¼-year period, while the lubricated rail handled heavier equipment and carried 90,942,464 gross tons in the same length of time. Yet the lubricated rail had many years of useful life left.*

low speeds. There's the rub: too low a superelevation, and excessive wear results; too high a superelevation, and the heavy-tonnage traffic pounds the low rail heavily, with attendant damage to track structures. Proper use of lubrication will alleviate some of this problem by reducing wear on the high rail.

### *Rail and track work life increased*

Examples too numerous to mention are available of unlubricated rails wearing on the gage side up to ½" a year on curves in the 5° to 8° range. New rail especially, not having been toughened by years of cold working, shows an accelerated wear in the first few months. After installation of lubricators, curve wear falls off sharply. A recent committee of experts from 22 railroads found that the use of lubrication has increased the life of such track anywhere from 25 per cent to 300 per cent. The wide range of this estimate is due to the many factors involved at a particular location—degree of curve, speed, tonnage, superelevation.

Another committee of railroad maintenance men reported that very often savings on track wear alone made a lubricator pay for itself in the first year of installation on new rail. These savings can be closely approached even when the curve-worn outer rail is shifted to low position and replaced with a No. 1 secondhand rail. Other savings are involved too: the high cost of labor and tie work caused by regaging or replacing.

It was also stated that perhaps even more savings per lubricator could be effected in busy yards and terminals than on mainline track with moderate curves. Without lubrication the life of expensive switch points is short. With lubrication it can be extended two times . . . four times . . . even six times over that of an unlubricated part, depending upon conditions.

### *Flange wear reduced*

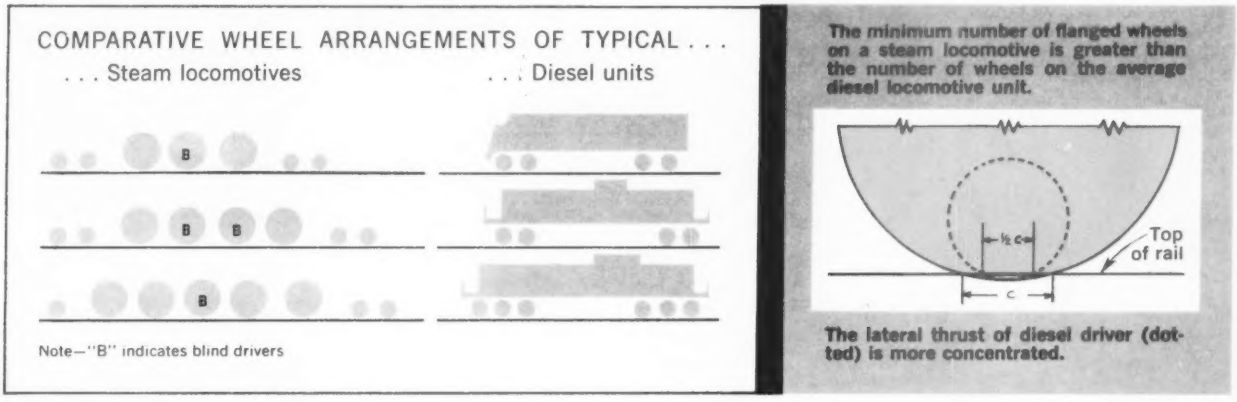
Where there is rail wear, there is bound to be wheel wear. Recent studies would seem to show that there has been an increase in wheel wear since the advent of diesels, for the reasons outlined above. This in itself would indicate a greater need for track lubrication.

Figures received from the railroads have indicated to us that diesel wheel life can be extended through proper lubrication anywhere from 50 per cent to 500 per cent, depending upon conditions, with the average well over 100 per cent.

Moreover, since the steel car wheel has become a definite part of railroading, reducing flange wear is of even greater importance. One of the advantages of the steel car wheel is an exceptionally long life, owing to its freedom from heat defects. Thus its life depends more on the wear of the flange than on anything else. An examination of some 6,000 steel car wheels has shown that while the length of operating life was excellent in each case, approximately 88 per cent were removed for flange wear. Reducing this wear would boost the remarkable record of the steel car wheel even higher.

### *Cut down curve resistance*

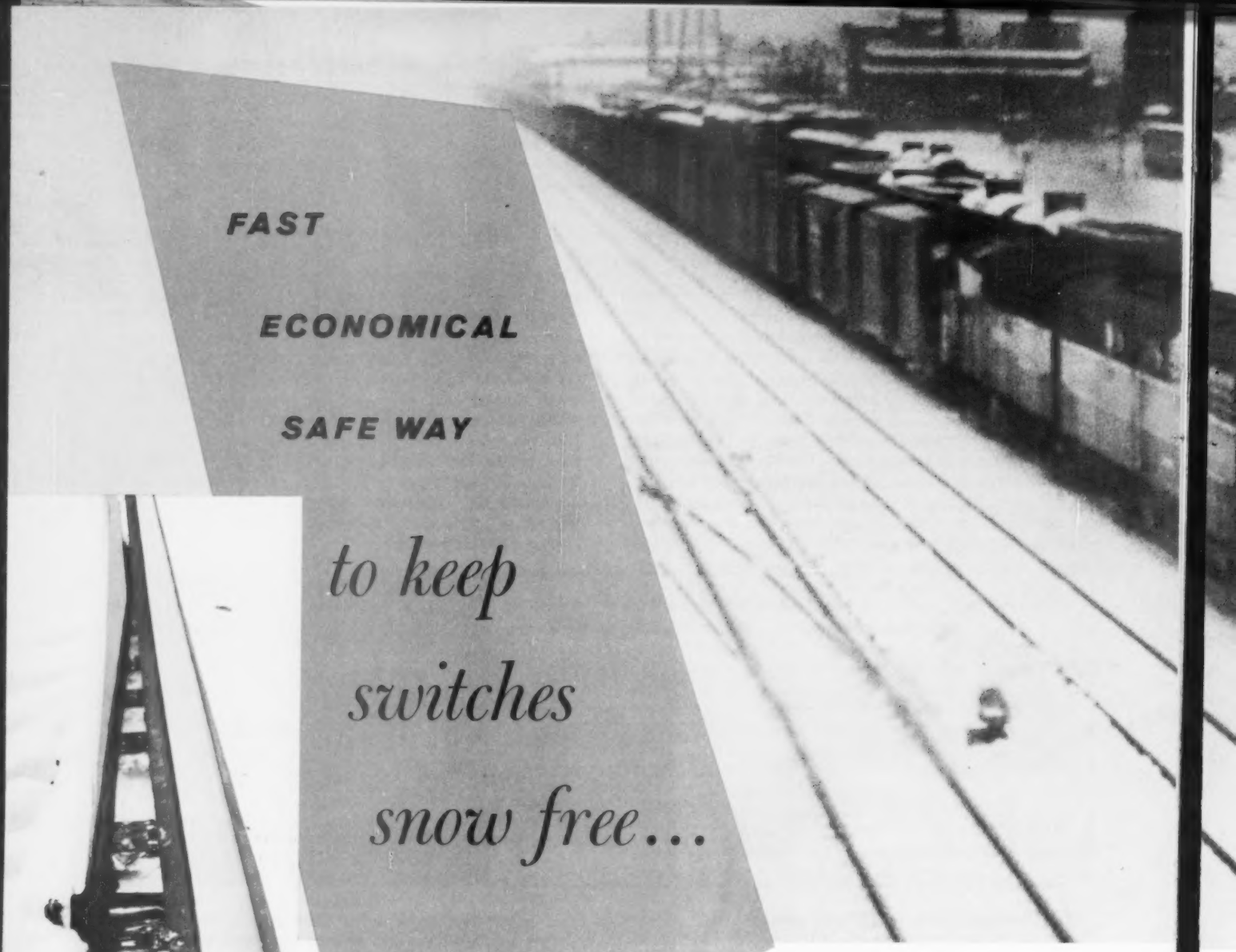
The well-known analysis of Wellington of curve resistance and the value at which he arrived have stood the test of time, despite differences of opinion in minor details. This unit value of curve resistance is 0.8 pounds per ton per degree of curvature. The two basic retarding elements are the horizontal forces acting on the lead wheel to guide the truck around the curve and the slippage of the inner wheels, which must travel over a slightly shorter distance than the outer wheels. It has been estimated that when the force on the lead wheel is multiplied by the coefficient of friction, at least 50 per cent of the total curve resistance is accounted for. Lubrication can reduce this coefficient of friction to nearly zero, and consequently the curve resistance is cut nearly in half.




While reduction of curve resistance is not nearly as important as minimizing wear on track and wheel flanges, nevertheless, certain advantages do accrue—more or less as a bonus for lubrication. Thus it is often possible to either increase tonnage carried over severe curves, make better time or use less fuel. Moreover, proper rail lubrication increases safety on curves, for there is a reduced tendency for the flange to climb the rail and derail the train. These factors can assume considerable importance in certain mountainous areas.

### *A Brake Shoe Representative can analyze your needs*

In an age when the railroad industry must examine every possibility of reducing operating costs and increasing efficiency, rail lubrication offers many attractive possibilities. It should be strongly emphasized, however, that proper planning is necessary to get the most out of the lubricator. It is wise, for example, to install lubricators as new rail is laid, because, as has been mentioned, the greatest wearing rate occurs during the first few months of track life. Installing the right number of lubricators in the proper spots is also of utmost importance. On these and other matters, experts should be consulted. The Railroad Products Division, American Brake Shoe Company will gladly analyze your needs, based on profile information, and submit recommendations that have been guided by many years of experience and pioneering in this important field.



**FAST**

**ECONOMICAL**

**SAFE WAY**

*to keep switches snow free...*

# *the RACOR®*

*IT'S FAST*—Snow does not get an opportunity to pile-up between switch points and stock rails with the Racor Snow-Blower on the job. It protects against sleet too! Strong, intermittent blasts of air—every few seconds—keep these sections as clean-as-a-whistle. This mechanical device is simple in construction. It consists of a source of compressed air, an anti-freeze injector, a cycling device and two manifolds equipped with adjustable nozzles. Existing air supply and air lines can be utilized.

*IT'S ECONOMICAL*—The Racor Snow-Blower is simple to install, easy to maintain, and economical to operate. This dependable device relieves the need for manual attention in bad weather, saving hours of time, labor and expense. It can be adapted to remote control operation if desired. The Racor Snow-Blower offers big savings in operating costs . . . far more than other snow removal methods.

# *SNOW-BLOWER*

*IT'S SAFE*—This advantage is the most important of all. Employees are not required to manually clear switches when conditions and visibility are bad. Also—with heat source eliminated—there's no problem of water from melted snow or ice, and no hazard of fire to track and operating equipment.

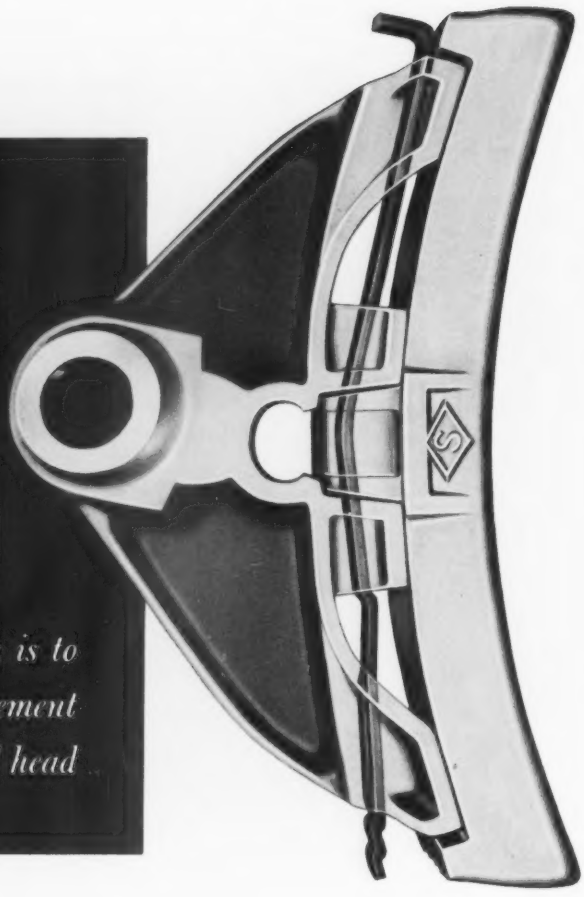
The Racor Snow-Blower has been field-tested and proven during many winters under extreme snow conditions. Take advantage of the fast, economical and safe Racor Snow-Blower next winter—you'll be thankful you did.

AMERICAN
**Brake Shoe**
COMPANY

RAILROAD PRODUCTS DIVISION
530 Fifth Avenue • New York 36, N. Y.

# Longer Life FOR THE Brake Head

*. . . the trick is to eliminate movement between shoe and head*



Brake head life can be considerably extended by simply using a spring-loaded locking device — the American Brake Shoe Lockey — that firmly clamps the brake shoe to the head, thereby eliminating movement between the parts. The Lockey is an A.A.R. approved alternate for the standard tapered key, which, according to American Brake Shoe studies, is subject to accelerated wear. The weakness of the standard key is that it is not a spring and consequently cannot maintain firm locking action under even moderate vibration.

Obviously, the head and the shoe receive a tremendous beating—even over the smoothest road bed. With a loose fit the heavy members take an even greater punishment. To make matters worse, wear accelerates as the gap between parts widens. Eliminate this play under all conditions and you keep brake head wear to an absolute minimum—it's as simple as that.

### *On 9 out of 10 new freight cars*

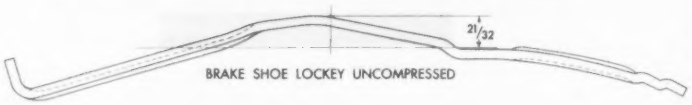
But the job that the Lockey has to handle is a tough one. To provide the right kind of mating force, it has to maintain a high level of pressure under all conditions of road, speed, and temperature. It should be capable of quick, simple installation and it should be inexpensive. The spring steel must resist breakage, wear, corrosion, and taking a permanent set. In other words it must be reusable and economical.

A great many railroad men have apparently agreed that the Lockey more than fits these requirements. For the past several years it has been specified as part of the brake equipment on *nine out of ten* new freight cars ordered for domestic service.

### *Economical for replacement service too*

Sales records indicate that the Brake Shoe Lockey is also

**HOW THE LOCKEY DOES ITS JOB**
installed in a new or an old brake head



catching on as a replacement for the standard key on stock already in service. The reason is simple. On a new head and shoe combination, having minimum clearances, the Lockey applies a spring force in excess of 1200 pounds. Even when installed in a brake head that has been worn in previous, standard key service to the maximum allowable keyway, the Lockey still holds the shoe firmly to the brake head with a force well over 400 pounds.

Thus it is good economy to replace the standard key with a Lockey on old equipment as well as on new, for the Lockey will arrest wear at the point reached when installed and thus extend the life of the brake head far beyond what might have been expected under the old conditions.

## *Vibration tests indicate source of wear*

One of the many studies made by Brake Shoe's research facilities, to explore brake head wear, was a rugged vibration test of two new, identical brake heads, one having its shoe attached with a standard tapered key, the other with the then newly developed Lockey.

At the end of 500 hours of vibration, both the standard forged steel key and its brake head had worn deeply at the contact points. The reason was obvious: by this time the shoe hung ¾ of an inch from the top toes of the brake head! Each vibration caused a terrific slamming of metal against metal.

On the other hand the head and shoe held by the Lockey showed no appreciable wear; they were still firmly held together by the spring force.

## *What it takes to build a better spring*

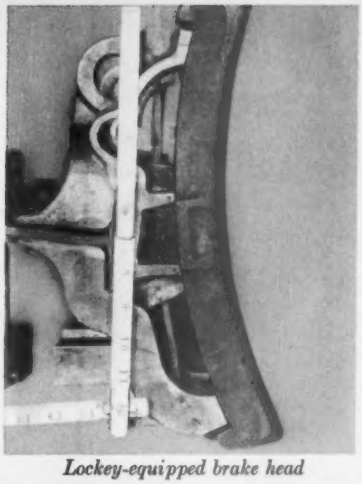
During the development of the Brake Shoe Lockey, literally hundreds of combinations of contour, dimensions, high carbon steel, special alloys, and special heat treatment were tried before the right one was found. The shape finally arrived at was, in essence, a spring steel strip with a raised portion at the center to engage the underside of the keyway of the brake shoe.

Thus the Lockey is a simple, one-piece design, which accounts for its low cost and durability. The brake beam and heads are kept in service with a very small investment —approximately 3% of the total cost for replacement.

To install, the Lockey is simply inserted through the keyway and driven into place with a few short raps of a hammer. To remove, it is driven in the reverse direction with a few hammer strokes on the lower end.

Indicative of the ability of these rugged Lockeys to take a beating is the bend test used for quality control in their manufacture. Lockey samples are bent around a pin one inch in diameter to a minimum of 150 degrees of arc—without breakage! Of course, such a test renders the part unfit for further service and is used only on a quality control sampling basis.

To sum up, the Lockey—simple to use, durable, and inexpensive—is capable of doing a big job: firmly clamping the brake shoe to its head and thereby extending the life of the brake head and beam.

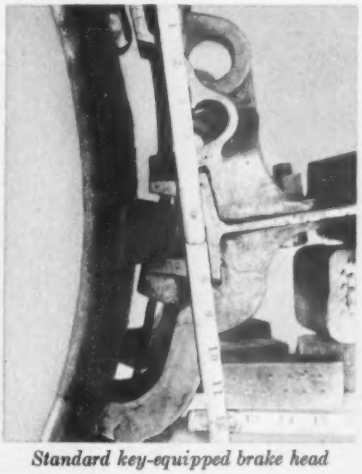


*Lockey-equipped brake head*

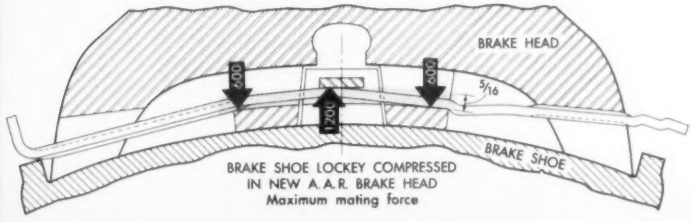
**AT THE END OF A 500 HOUR VIBRATION TEST.** *Mounted as shown, these brake sets were vibrated for 500 hours. The upper shoe and head were equipped with the American Brake Shoe Lockey; the pair below was fitted with a standard tapered key. All components were new at the beginning of the test and subjected to identical conditions.*

*Results? The lower pair, equipped with the standard key, shows severe wear. The shoe now hangs ¾" from the top toes of the brake head . . . causing terrific impact and abrasion with each vibration. Wear is evident on the lower lugs of the shoe and head. Close inspection of the standard key will show the wear in its profile. The loose fit of the shoe lug in its pocket and the wear involved is also apparent.*

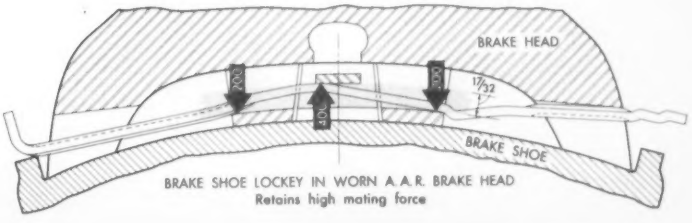
*Note that the upper pair, equipped with the Lockey, is still firmly clamped together and evidences no wear nor shifting of parts.*



*Standard key-equipped brake head*




BRAKE SHOE LOCKEY COMPRESSED IN NEW A.A.R. BRAKE HEAD
Maximum mating force




BRAKE SHOE LOCKEY IN WORN A.A.R. BRAKE HEAD
Retains high mating force

# The true measure of freight car wheel value...

# More Ton-Miles per dollar

Delivering more ton-miles per dollar is the job that Southern cast steel wheels have been performing ever since their introduction to American railroads ten years ago.

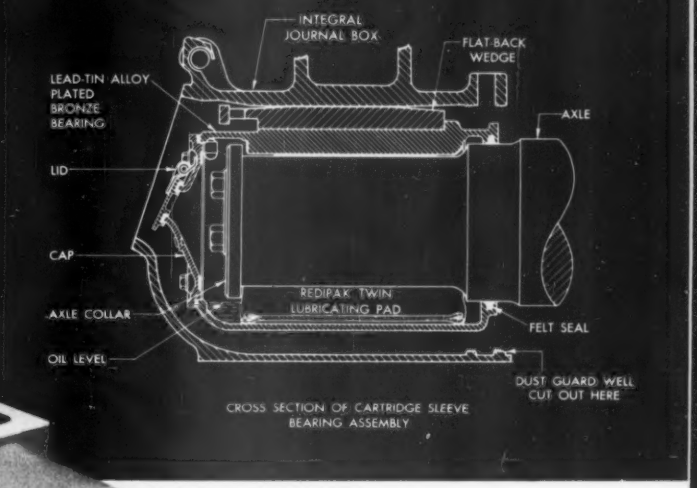
In these ten years, Southern cast steel wheels have set several new standards . . . a new standard of quality, a new standard of performance, a new standard of *value*.

Value, in the case of freight car wheels, means simply more ton-miles per wheel dollar. Produced in the world's most modern wheel plant, Southern cast steel wheels—with precision machined treads and hubs—consistently roll farther, cost less. The ten-year record proves it!

AMERICAN **Brake Shoe** COMPANY

RAILROAD PRODUCTS DIVISION
530 Fifth Avenue, New York 36, N. Y.

*The cartridge bearing encircles the journal. The journal collar is machined off to permit assembly, and a separate collar is secured with cap screws. The cartridge unit is cast of high strength bronze and plated with a heavy-duty lead-tin alloy. It contains its own lubricating system and is effectively sealed by a lubricated felt ring riding on the conventional dust guard diameter. The Redipak twin lubricating pad is installed when the cartridge is applied to the axle. Oil is contained in the cartridge, not in the box. The usual journal box lid is not needed.*



CROSS SECTION OF CARTRIDGE SLEEVE BEARING ASSEMBLY

# Here is the New National Cartridge Bearing!

*Road service is now demonstrating that this economical sleeve bearing stands up under today's toughest freight car service*

This revolutionary new concept in journal bearing design—now being road tested—may well become the freight car bearing of the future. The National Cartridge Bearing is a complete, sealed bearing and lubricating system. It neatly fits a standard journal box after the dust guard well has been cut out. The bearing completely encircles the journal—so it cannot lift or shift—and contains its own oil reservoir, Redipak® twin lubricating pad, cover and seal.

Here are a few of the principal advantages offered by the cartridge bearing unit: It stands up to greater impact and braking forces than do roller bearings. It requires very little maintenance—just an infrequent check of oil level and occasional replenishment of oil supply. It assures longer life—no measurable wear on either bearings or journals in over a year's accelerated road service. It minimizes the chances of hot boxes. And finally, it provides savings in initial costs when compared to roller bearings . . . savings in installation and replacement costs . . . and savings in removal costs when a wheel change is needed.

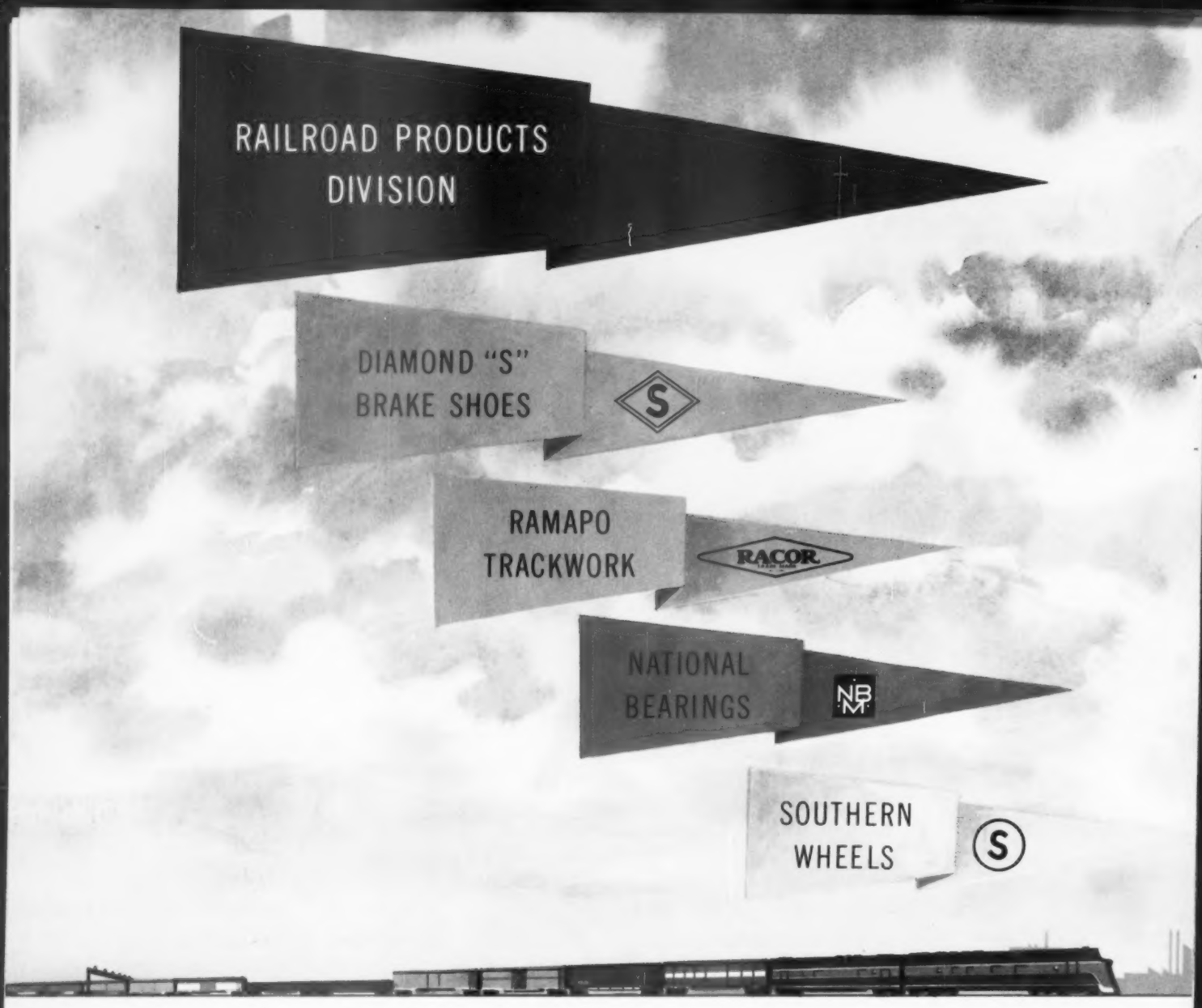
Present service tests on three roads have proven excellent and are validating our laboratory findings. One thousand car sets have been approved by AAR for test in interchange service.

*Wheel, axle and cartridge sets are made up in advance for assembly into trucks. No bearing work is done on the rip track.*

AMERICAN Brake Shoe COMPANY

RAILROAD PRODUCTS DIVISION

530 Fifth Avenue • New York 36, N. Y.




# *FOUR FAMOUS NAMES*

## Surge Ahead Under A New Brake Shoe Banner

Brake Shoe's recently organized Railroad Products Division combines the personnel, experience and manufacturing facilities of the four famous product lines shown above.

In the quest for greater railroading achievements, the Railroad Products Division is dedicated to contribute workable solutions for your present and future operating problems. We stand ready across the nation to answer your call with improved engineering, manufacturing and service.

AMERICAN **Brake Shoe** COMPANY

RAILROAD PRODUCTS DIVISION
530 Fifth Avenue • New York 36, N. Y.

# inspection

*of renovated packing*

# means protection

*from high maintenance costs*

Short ends, fly, lint, snarls, and knots in renovated packing are specifically outlawed by the specifications of the Association of American Railroads. However, some railroad inspectors, after checking into the situation, rejected 50% more renovated packing than was previously discarded. This proves that below-standard renovated packing is still being used.

The condition is being corrected by railroads which have instituted inspection during the renovating process—the only sure way of detecting sub-standard material.

***You can substantially reduce your operating costs by improving the quality of your renovated packing.***

INSTITUTE OF THREAD MACHINERS — JOURNAL BOX PACKING — MEMBER

**INSTITUTE OF THREAD MACHINERS, INC.**

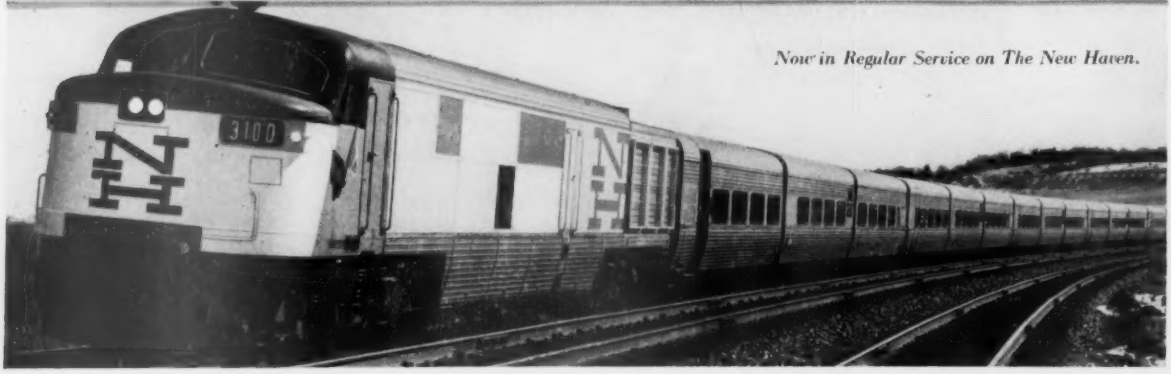
141 East 44th Street, New York 17, New York

**Atlas Processing Corp.**, New York, N. Y.
**Meyer Burstein & Sons**, Neenah, Wisconsin
**Dallas Waste Mills**, Dallas, Texas
**The J. Milton Hagy Waste Works**, Philadelphia, Pa.
**John J. McGrath, Inc.**, Philadelphia, Pa.
**Miller Waste Mills, Inc.**, Winona, Minn.
**National Waste Company**, New York, N. Y.
**O'Neill Brothers, Inc.**, Philadelphia, Pa.
**The Pittsburgh Waste Co., Inc.**, Swissvale, Pa.
**Riverside Mills**, Augusta, Ga.
**Royal Manufacturing Company**, Perth Amboy, N. J.
**Southland Manufacturing Co., Inc.**, Norfolk, Va.
**Twin City Textile Mills Waste Co.**, St. Paul, Minn.

# *lightweight* is the word for comfort...

Demonstrated by The New Haven's new *lightweight* trains . . . with *lightweight* seating by Heywood-Wakefield. Passenger comfort is a foregone conclusion with these new coach seats designed and manufactured by Heywood-Wakefield. Contoured for comfort, made of aluminum, steel and vacuum-moulded plastics, they are half the weight of a conventional seat. A truly *lightweight* seat! Cuts cars' per seat cost almost in half, too! Tested fabrics are used for seats and backs, with plastic for special head rests and arm caps. The use of these lightweight fabrics not only helps to keep weight to a minimum but also affords greater comfort because it permits the underneath rubber cushioning to provide better support.

acf JOHN QUINCY ADAMS train built by American Car & Foundry, Division of ACF INDUSTRIES, INC.
Extra modern, low-slung; a Talgo-type with *lightweight* units.




*Now in Regular Service on The New Haven.*

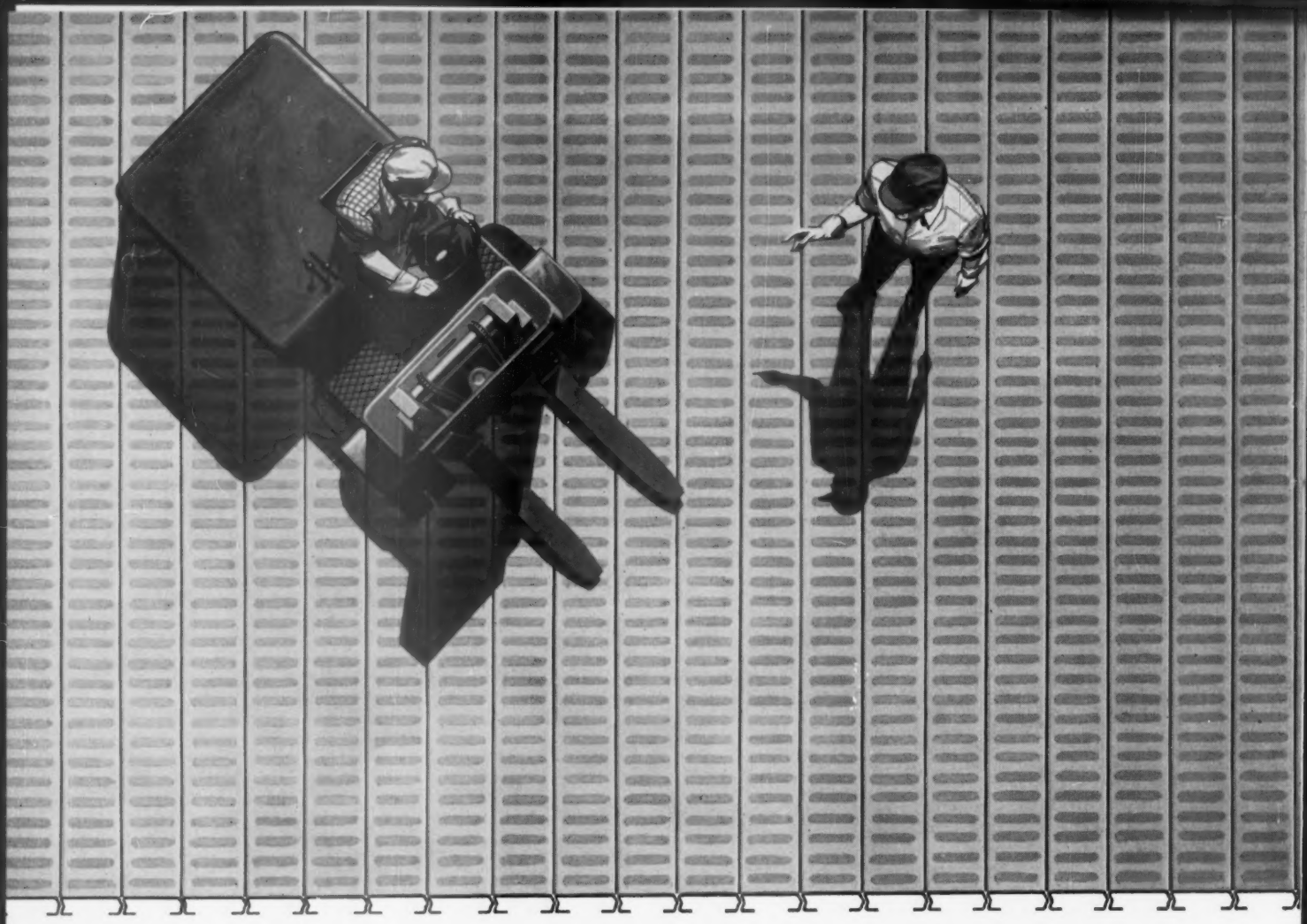
See your Heywood representative for full details on all seating for coaches, dome cars, lounges, dining and sleeping cars.

Transportation Seating Division, Gardner, Massachusetts, Orillia, Ontario, Canada. In Canada: Railway & Power Engineering Corporation, Ltd.

HEYWOOD-WAKEFIELD
EST. 1826

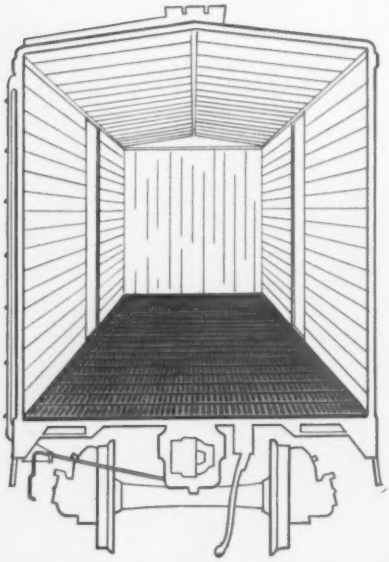
Budd The ROGER WILLIAMS train built by BUDD MFG. CO. Double-ender construction, *lightweight* units.

*Now in Regular Service on The New Haven.*



# Construct your "Prevention Package"* from the floor up

**N-S-F® helps the railroads reduce the 5-million-dollar annual loss and claim bill due to defective and unfit equipment**



*"Prevention Package" . . . a freight car built with special features and maintained with special care to help put the brakes on the railroads' skyrocketing Cause F (defective or unfit equipment) loss and damage claims, now edging the $5-million annual mark.

Starting point in constructing a "Prevention Package" is right down on the floor, using NAILABLE STEEL FLOORING. That's logical. And here's why:

- N-S-F will give the car greater structural strength from the underframe up.
- N-S-F substantially reduces floor damage and repairs by standing up to the concentrated loads of lift-truck operations.
- N-S-F takes repeated nailing of blocked loads without deterioration or leaking. Nails are driven into nailing grooves, not *through* the floor.

Full information about N-S-F and why it is the backbone of the "Prevention Package" is readily available from Stran-Steel representatives in Chicago, New York, Philadelphia, St. Louis, Cleveland, San Francisco, Minneapolis and Atlanta. In Canada, N-S-F is made and sold by International Equipment Co., Ltd., Montreal.

*N-S-F is a registered trademark of Stran-Steel Corporation.*

**N-S-F®: NAILABLE STEEL FLOORING**
Originated and sold by—
**STRAN-STEEL CORPORATION**
Dept. K-45 • Detroit 29, Michigan • Division of
NATIONAL STEEL CORPORATION


# NEW POWER...NEW LIFE...NEW "LOOK" FOR YOUR OLD STEAM WRECKER...

## *With L. B. Smith Diesel Conversion*

The 29-year-old Long Island locomotive wrecking crane shown above has just been completely modernized in our shops. Conversion from steam to Diesel has added years of service, increased efficiency and reduced operating costs on this 150 ton Brownhoist.

Conversion included plenty of power in a GM Diesel with Twin Disc torque converter. Clutches are air-operated by a Westinghouse compressor. The new "Look" benefits the operator, for he now has a complete view of his work from the cab which has been relocated in a right front position. All controls have been placed in the same arrangement with which he is familiar.

This is one of some 50 cranes modernized by L. B. Smith personnel. With a major portion of our large plant facilities devoted to the repair of cranes, shovels and heavy equipment, we make every possible effort to keep the quality of our work equal to the reputation we have earned over the years.

If your Dieselization program includes the conversion of wrecking cranes, you will undoubtedly benefit from discussing it with us.

***For complete information, phone or write***

**L. B. SMITH, INC.**

CAMP HILL, PENNSYLVANIA

Telephone (Harrisburg) RE 7-3431

*Being interviewed is Curtice C. White, Senior Development Engineer*

# "These channels actually cool the battery"

*At the Exide Laboratories—*

**Reporter:** First, Mr. White, tell me what makes a battery hot.

**White:** Heavy loads—they often raise battery temperature as much as 20 degrees.

**Reporter:** How do the channels cool it?

**White:** The heated electrolyte rises to the top through the channels. Plates are cooled by electrolyte coming up from the bottom.

**Reporter:** Don't all batteries have channels?

**White:** Unfortunately, no. It is the tubular construction of the Exide-Ironclad positive plate that leaves these channels on both sides.

**Reporter:** What does this feature mean in battery performance?

**White:** Longer battery life, for one thing. The battery stays cooler. Has less incidence of hot spots. Plates operate at a more uniform temperature.

**Reporter:** Obviously this is an important feature of Exide-Ironclad.

**White:** Yes it is, but it's just one of many engineering details that contribute to its high capacity and long life.

**Note to battery users:** Whenever you order heavy duty batteries or the equipment that requires them, be sure to specify Exide-Ironclad. For detailed bulletin, write Exide Industrial Division, The Electric Storage Battery Co., Philadelphia 2, Pa.


Battery for railway car lighting and air conditioning. Model EHL. Write for Bulletin No. 5168.

Battery for railway diesel starting. Exide-Ironclad Model MVD. Write for Bulletin No. 5348.

Exide®

THE ELECTRIC STORAGE BATTERY COMPANY

NYC train consists come to New York center from yards by Bell System teletypewriters, are automatically switched to proper outgoing circuits for transmission to other yards.

# How Bell System communications help N.Y.C. improve utilization of 60,000 cars

The new communications system of The New York Central provides accurate control of 60,000 cars a day, makes for better equipment utilization.

Private line teletypewriter switching systems in the NYC's "service bureaus" at New York, Cleveland, Indianapolis and Detroit *automatically* relay consists as well as passing, interchange and on-hand reports among the road's 67 yards.

Since the new operation was started:

**1.** Car utilization is greatly improved. Tight control has cut turn-around time.

**2.** Yard switching and servicing is now preplanned. Cost per car switched is down.

**3.** Tracing men can work faster because they get up-to-the-minute passing reports.

• • • •

***The NYC is keeping its communications abreast — and ahead — of increasing business and traffic. Have you reviewed your own communications? Call your Bell Telephone Company business office. A representative will be glad to help you.***

BELL TELEPHONE SYSTEM

PRIVATE LINE TELEPHONE • PRIVATE LINE TELETYPEWRITER • DATA TRANSMISSION SYSTEMS
CHANNELS FOR: REMOTE METERING AND CONTROL • TELEPHOTOGRAPH • CLOSED CIRCUIT TV

# UNI-PAK

## for dependable Journal Lubrication


## is your soundest investment

The manufacturers of Uni-Pak® were the first to recognize the merits of direct-feed lubrication. Uni-Pak is the only pad which has been in continuous service for three years without requiring a major design change.

*No other journal lubricator has a comparable record of performance.*

Uni-Pak is scientifically engineered and manufactured from highest quality materials, resulting in maximum lubrication for all AAR Journals. Installation is rapid and removal easy. Four-ply oil-thirsty wicking yarns, sewn all the way through each pad are a patented Uni-Pak feature assuring a proper supply of filtered oil to the journal at all times.

The Uni-Pak core, finest foam-type neoprene of controlled density, stands up under temperature extremes, shocks and prolonged saturation.

As verification of the fine experience dozens of railroads have had with Uni-Pak lubricators during the past three and one-half years, more than 3,000 car-sets are being applied monthly on American railroads.

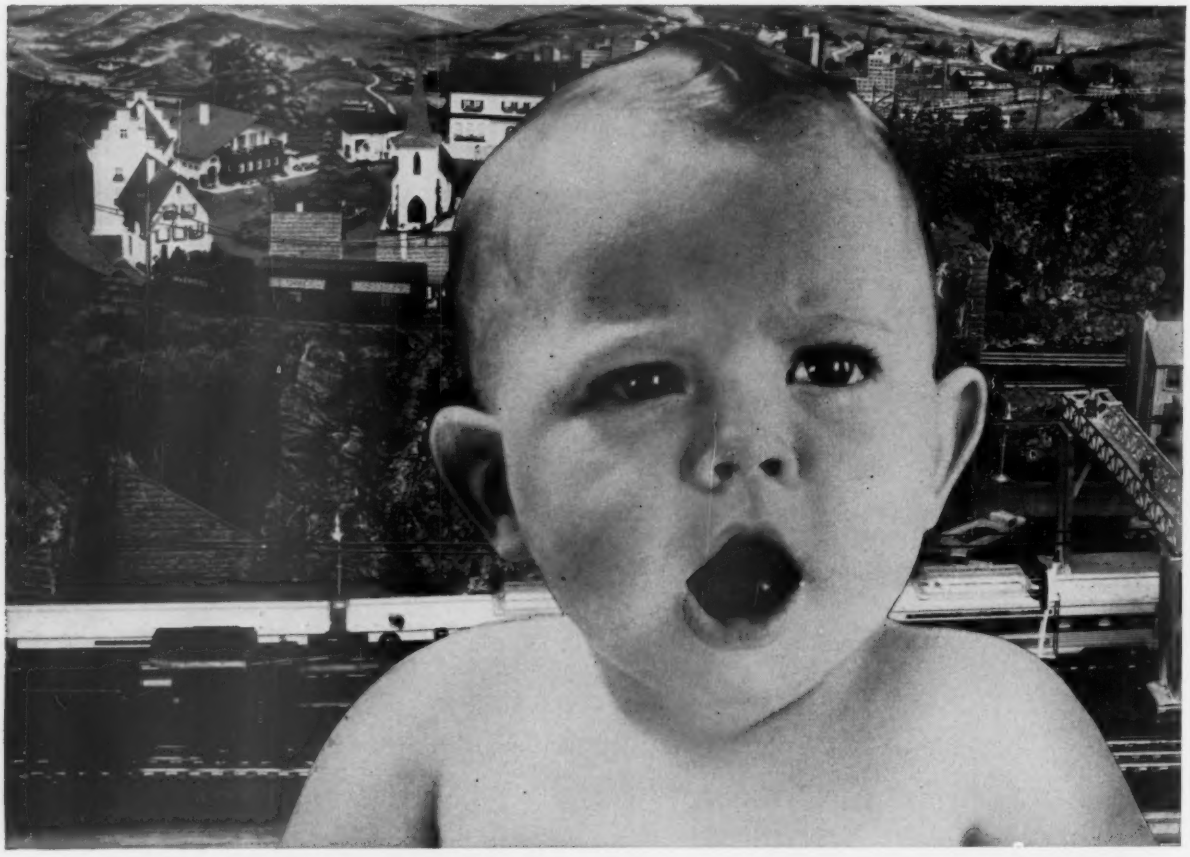
**More than 400,000 Uni-Pak lubricators in service.**

Write for Booklet

# UNI-PAK CORPORATION

**SWISSVALE, PITTSBURGH 18, PENNSYLVANIA**

**Offices: New York, 366 Madison Ave.; Chicago 120 So. La Salle St.; Pittsburgh, 1213 Belmont St.**
**Representatives: Philadelphia, Cleveland, St. Paul, Houston, San Francisco, Montreal Canada, St. Louis, Richmond, Baltimore, Dallas, Washington, Louisville.**



# "You Mean Bird Self-Sealing Tie Pads Can Reduce My Cross Tie Costs 59%?"

Oh baby! That's a *real* saving. And it's as easy as ABC to prove for yourself:

**A.** The average installed cost of a new main line cross tie, including cost of original tie plus labor, is approximately $7.00*. With a normal life of 20 years, this amounts to 35¢ per year.

**B.** By sealing out destructive moisture and abrasive materials from under-plate and spike-hole areas, Bird Self-Sealing Tie Pads increase the life of the average tie by at least 15 years. At 35¢ per year, this saving amounts to $5.25.

**C.** The cost of obtaining this saving? About $1.12 for two five-ply 7¾" x 13" Bird Self-Sealing Tie Pads. *Net saving is $4.13 — or 59% of the installed cost of the original tie.*

Bird Self-Sealing Tie Pads are the *only* tie pads which have *proved* their durable and effective seal with the tie through years of in-track service. Want the whole story? Write to Bird Tie Pads, Department HRA, East Walpole, Massachusetts.

*These figures represent the most conservative minimum. If your costs are higher, savings are proportionately higher.

## *Bird Self-Sealing Tie Pads Are Recommended For:*

Bridge Decks • Curves • Switch Timbers • Highway Grade Crossings and Other Paved Areas • Crossing Frogs • Insulating Joints • With Smaller Tie Plates • Pile Cutoffs • Through Station Platforms • Out-of-Face Installations in Rail-Laying Programs • Locations where tie life is short or replacement costs are high.

*Buy the Best...* BIRD & SON inc. Established 1795 *Buy BIRD*

Unretouched photograph of cross section of tie shows under-plate and spike-hole area after 10 years' protection by Bird Self-Sealing Tie Pads. Destructive moisture and abrasive materials could not penetrate the seal.

*Announcing*

# THE *New* PEERLESS DRAFT GEAR


This NEW PEERLESS DRAFT GEAR
Features Twin Arrangement of Parts
Shoes Resisted by Own Spring Nest
Actuated by a Common Wedge
High Capacity-Low Terminal Forces

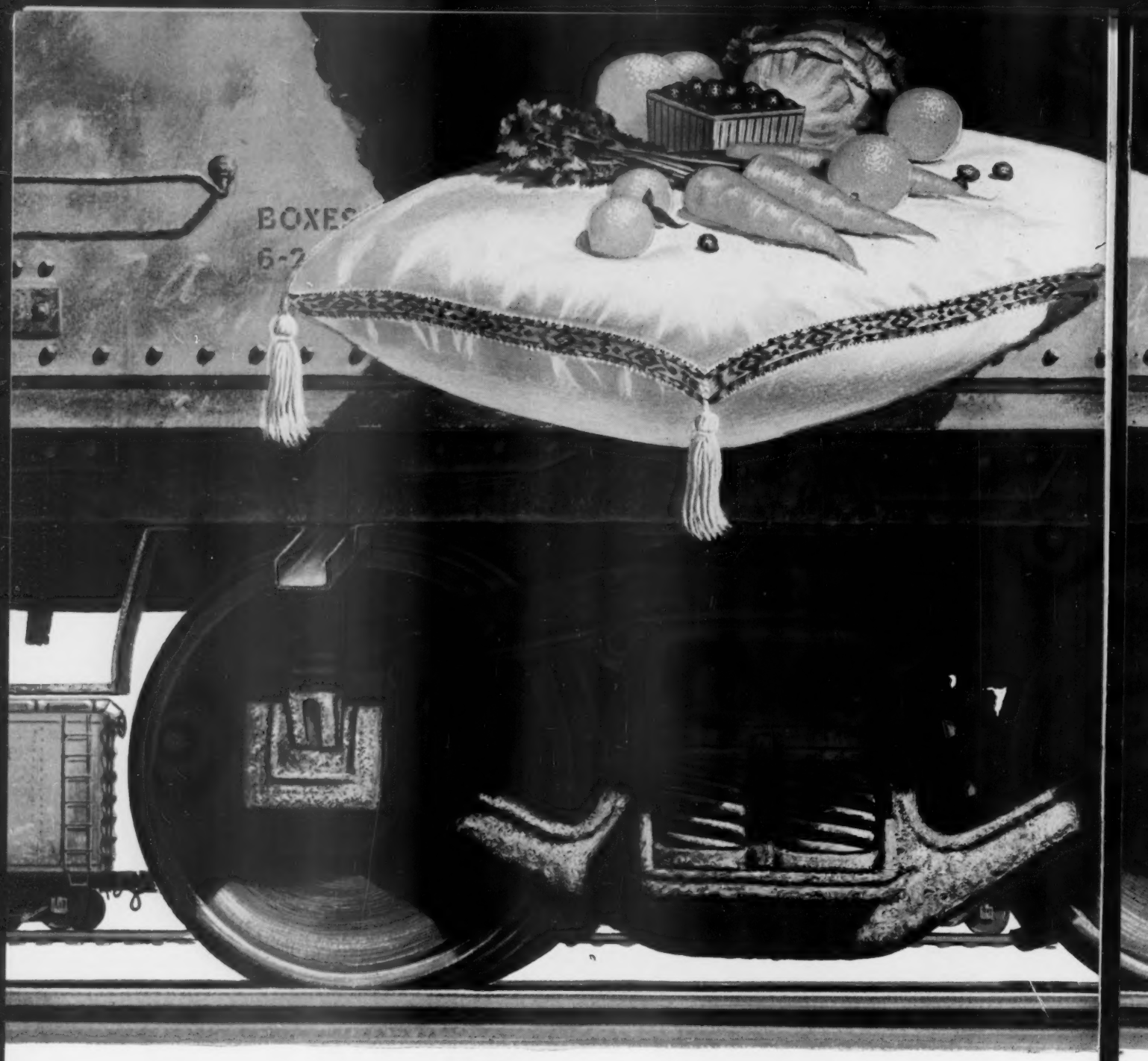
**PEERLESS EQUIPMENT**

Division of Poor and Company

**332 SOUTH MICHIGAN AVENUE, CHICAGO 4, ILLINOIS**

# TIME TO CLEAR THE PICTURE


*for the* ASSOCIATION OF AMERICAN RAILROADS




## *On the A.R.T.*

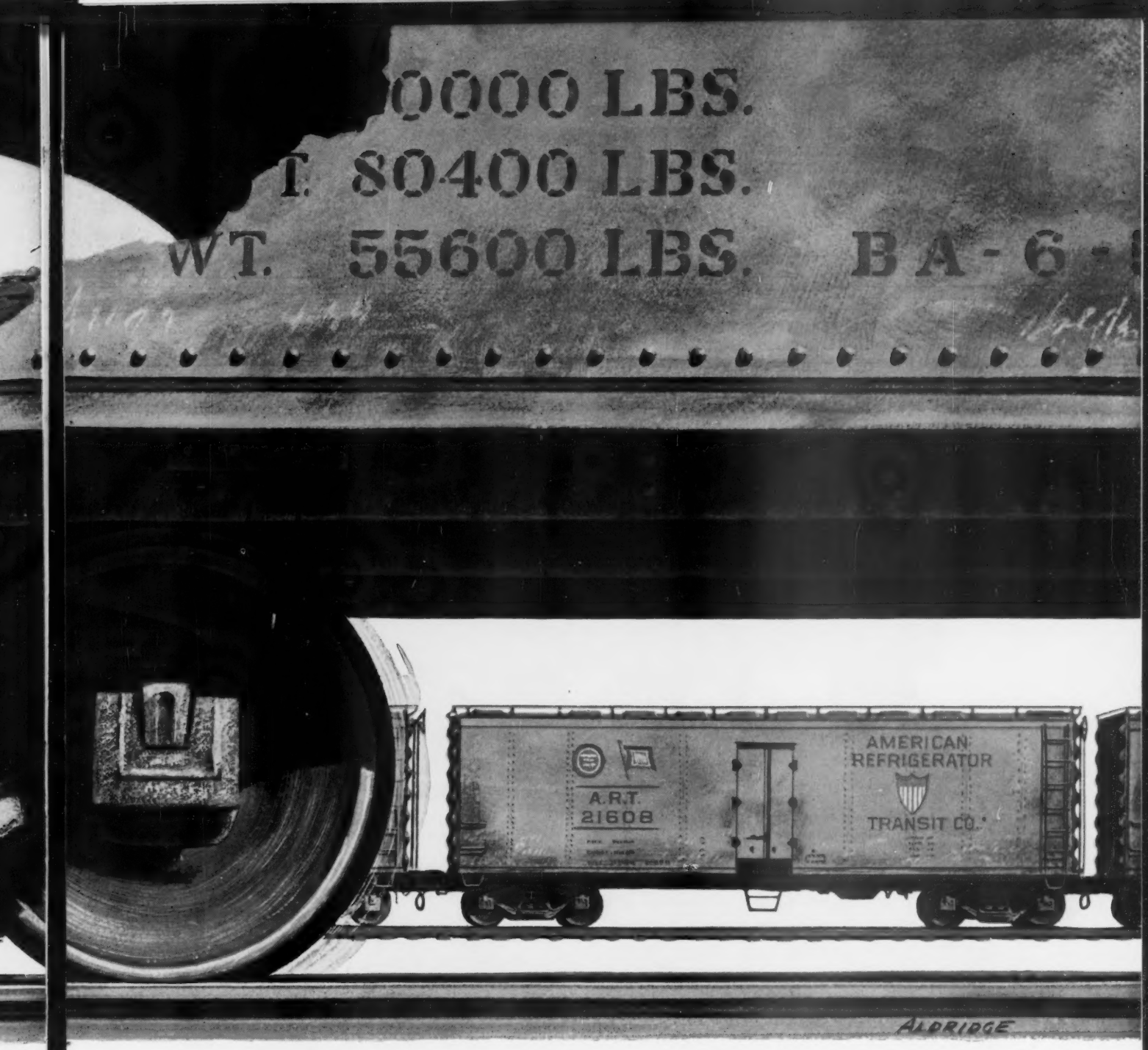
# THEY WHET YOUR APPETITE

At any fruit or vegetable counter, the biggest sales-builder of all is the "just-picked" look. That's why the A. R. T. Company has done such a topflight job of providing cars that ride smoothly at higher speeds . . . to bring produce from the orchards and farms to your dinner table safely and quickly.

Is this good service possible only with new cars? Not at all. Older cars—with trucks dating back to the pre-Ride-Control era—are simply brought up to modern riding standards with ASF Ride-Control Packages. Change-over takes only a few minutes and the investment is small—practically nothing, in fact, compared with the way *improved service* retains and *regains* freight revenues.

Safe, prompt arrival of *any* commodity carried on the rails is just as important and desirable as a fresh-looking orange! Further tests on your road will prove how Packages can help you increase *profits* . . . through greater car utilization, better service, fewer damage claims.

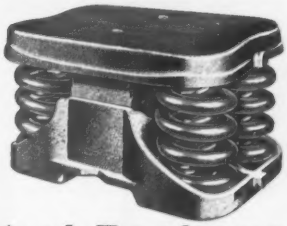
Now is the time to make smooth riding another objective of your general repairs program!




# WITH SMOOTH-RIDING CARS!

**NOW . . . all ASF Ride-Control Packages are fitted with Extended Life Springs**

In appearance, these springs look like any standard truck spring . . . but tests prove they average at least 10 times longer life! Ride-Control Packages offer you a quick answer to smoother riding—and an answer to costly spring failures and replacement.



**Bring your older cars up to modern riding standards . . . with**

ASF **Ride-Control Packages**

**AMERICAN STEEL FOUNDRIES**

Prudential Plaza, Chicago 1, Illinois

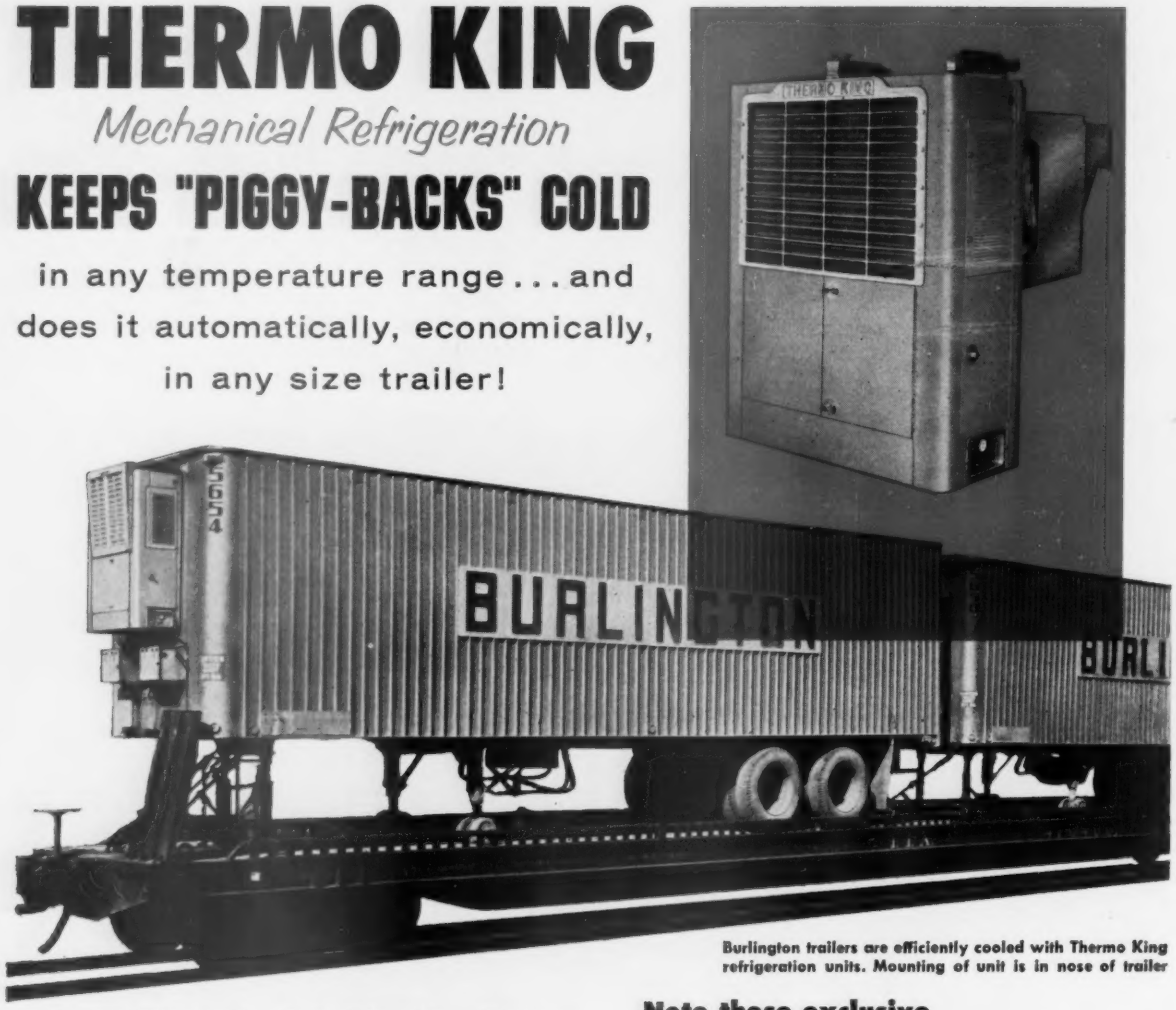
Canadian Sales: International Equipment Co., Ltd., Montreal 1, Quebec

# THERMO KING

*Mechanical Refrigeration*

## KEEPS "PIGGY-BACKS" COLD

in any temperature range . . . and
does it automatically, economically,
in any size trailer!




Burlington trailers are efficiently cooled with Thermo King refrigeration units. Mounting of unit is in nose of trailer

Thermo King mechanical refrigeration offers you dependable temperature control at the snap of a switch. Just set it and forget it. It is a rugged, trouble-free unit, perfected in 20 years of production by the world's largest maker of mechanical transport refrigeration. Thermo King costs less to buy, less to maintain, and less to operate than any other type of refrigeration.

**Note these exclusive Thermo King features:**

- fully automatic, including defrost
- cools or heats at snap of a switch
- self-contained single-package construction
- easily installed, replaced, or serviced
- money-saving automatic start-stop engine operation in response to temperature needs
- super capacity in wide variety of models

**THERMO KING MAINTAINS THE ONLY NATIONWIDE SERVICE AND PARTS ORGANIZATION IN THE INDUSTRY**

**WRITE FOR FREE INFORMATION**

☐ Send data. ☐ Send representative.

Name_____

Company_____

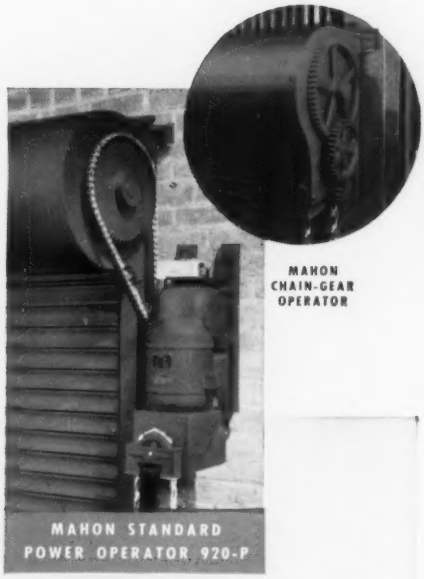
Address_____

City_____ Zone_____ State_____

MAIL TODAY
TO
THERMO KING CORP.
44 South 12th Street
Minneapolis 3, Minn.

# Rolling Steel Doors

*Manually, Mechanically or Electrically Operated*



MAHON CHAIN-GEAR OPERATOR

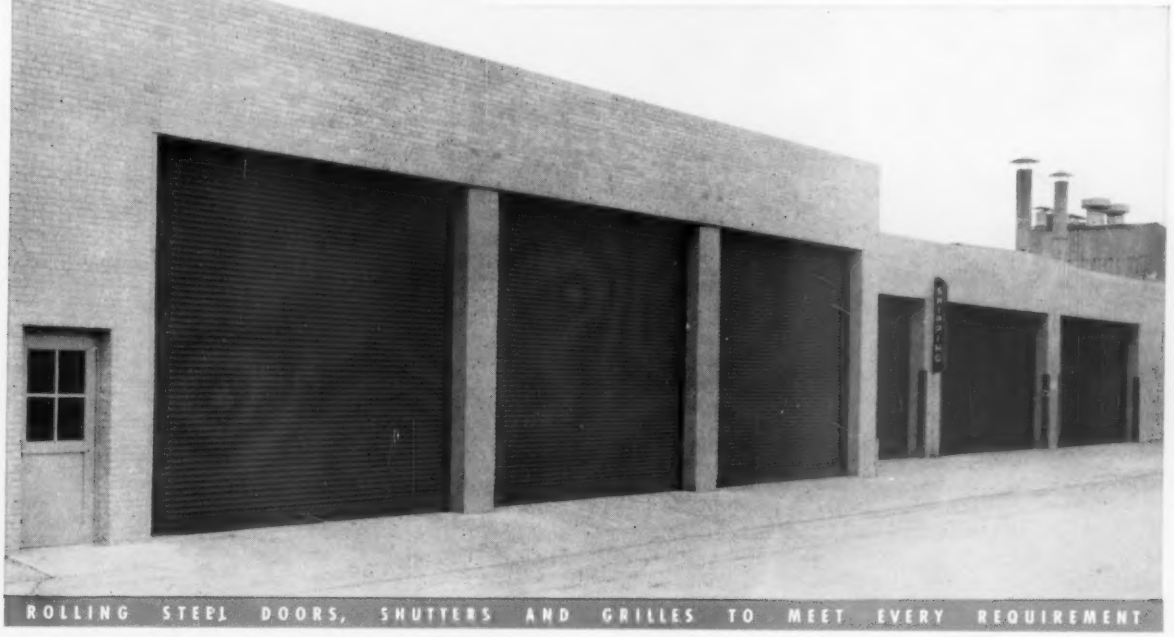
MAHON STANDARD POWER OPERATOR 920-P

When you want positive protection, permanence, low maintenance, and the ultimate in convenience and operating efficiency, you will select Rolling Steel Doors. Because, in truck and railroad openings in industrial and commercial buildings, and in loading dock and transfer dock openings, rolling steel doors offer definite timesaving and space saving advantages over any other type of door. The vertical roll-up action of the door utilizes no usable space either inside or outside the opening . . . and, there are no overhead tracks or other obstructions to interfere with crane handling or restrict headroom adjacent to the opening. No other type of door can give you the positive security, firesafety, and everyday operating convenience of a good, quick-opening, quick-closing, power operated rolling steel door. Permanent, all-metal construction reduces maintenance to a negligible factor, and assures a lifetime of continuous trouble-free service. When you buy a rolling steel door, it will pay you to check specifications carefully . . . you'll find that Mahon doors are built better to give you better service over a longer period of time—for instance, the galvanized steel in Mahon curtain slats is BONDERIZED and DIP-COATED with Synthetic Enamel which is baked on at 350° F. prior to roll-forming. This is just one of the extra-value features of Mahon Rolling Steel Doors . . . comparison will disclose many others that add up to a greater over-all value, and, a better investment. See Sweet's Files for complete information, or write for Catalogue G-57.

**THE R. C. MAHON COMPANY • Detroit 34, Michigan**

Sales-Engineering Offices in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Underwriters' Labeled Rolling Steel Fire Doors and Fire Shutters; Underwriters' Rated Fire Walls; Insulated Metal Curtain Walls; Electrified M-Floors; Acoustical and Troffer Forms; and Steel Roof Decks and Long Span M-Decks.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Six 18' x 14' Mahon Power Operated Rolling Steel Doors installed in openings of an Enclosed Loading Dock in the Peninsular Metal Products Corporation's Plant, Ferndale, Michigan. Lawrence G. Markey, Inc., General Contractors.

# M A H O N

MISSOURI PACIFIC LINES

# Foresight sets the MODERN PACE

## "Look Ahead" Planning of Missouri Pacific Proven by purchases of

## Commonwealth

One-piece cast steel flat car underframe arranged for application of end bulkheads.


53'6" long flat car with one-piece underframe.

Commonwealth cast steel pulpwood car underframe with interlocking upright ends.


Pulpwood car with Commonwealth one-piece underframe.

# maintenance-free Underframes

The Missouri Pacific Railroad has placed its *fifth* order for Commonwealth one-piece cast steel Underframes which the railroad will use to build 200 70-ton pulpwood cars. In addition, a lot of 50-ton flat cars with Commonwealth Underframes is in service.

Looking ahead to what may well be a continuation of the present period of rising costs, the Missouri Pacific is assured of years and years of maintenance-free underframe service and lower upkeep costs per car.

Many, many years of service have proven that flat cars, pulpwood cars and other types of quality freight cars with Commonwealth Underframes assure superior, better-built equipment. They provide maximum strength at minimum weight, longer life, freedom from corrosion problems and greater availability with increased revenue. Car construction is simplified.

Thousands of flat cars and pulpwood cars with Commonwealth Underframes in service on many leading railroads are proving their exceptionally long life and the sound economy of the investment.

*Plan wisely for the future . . . invest in Commonwealth Underframes*

**GENERAL STEEL CASTINGS**

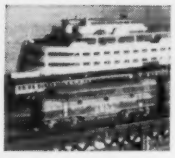
GRANITE CITY, ILL. • EDDYSTONE, PA. • AVONMORE, PA.

GEARED TO PROGRESS P R I MEMBER

*Lubrication*

*case study–*

## STANDARD HD Oil's ten years' service on the GM & O



This is a case story about the performance of STANDARD HD Oil in eight power units on the Gulf Mobile & Ohio over the last ten years. These eight EMD units pull "hot shot" passenger trains, including the famed "Abraham Lincoln" and the "Ann Rutledge," between Chicago and St. Louis. The units roll up 18,000 to 20,000 miles per month. They travel the 285 miles of the route in less than five and a half hours, including station stops.

**Recently one of these units** was rebuilt and converted to a higher horsepower rating. It had operated over 500,000 miles without mechanical failure *and without crankcase drain.* Inspection revealed that moving parts were free and in excellent working condition. Little or no wear was observed, and minimum deposits were found. Parts were reinstalled and the unit was returned to service. This is a real tribute to GM&O maintenance and to STANDARD HD Oil.

STANDARD HD Oil can deliver this kind of service for you. Find out how. Write or call Railway Sales Department, Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.

**STANDARD OIL COMPANY**
(Indiana)

STANDARD

TODAY'S AAR RESEARCH CENTER: Administration and Mechanical Building to left; new Engineering Buildng on right.

# What's New in AAR Research

Engineering laboratory scheduled for completion this year will be available for mechanical research on fatigue testing of axles and testing of diesel fuel and lubricants.

The AAR Mechanical Division research program for 1957 will cost almost $600,000. Research activities have been accelerated and expanded as rapidly as testing equipment can be provided and floor space made available.

New facilities for the mechanical laboratory include a machine for brake shoe and wheel testing, a testing machine for studying starved lubrication of journal bearings and a new hyraulic pumping equipment for the car press.

### *Axle Improvement*

While the axle fatigue testing machinery, formerly operated under arrangement with Timken Roller Bearing Company at Canton, Ohio, is being held waiting installation, a program has been outlined for continued research in further improvement of axles. This program will permit closer contact with the Committee on Axles and will include such questions as the cause and effect of copper penetration in cracked journals, fatigue cracks occuring between wheel seats of axles in high speed service (laboratory and road tests), "cold breaks" in the journal area, and investigation of diesel locomotive axle failures.

### *Draft Gear Tests*

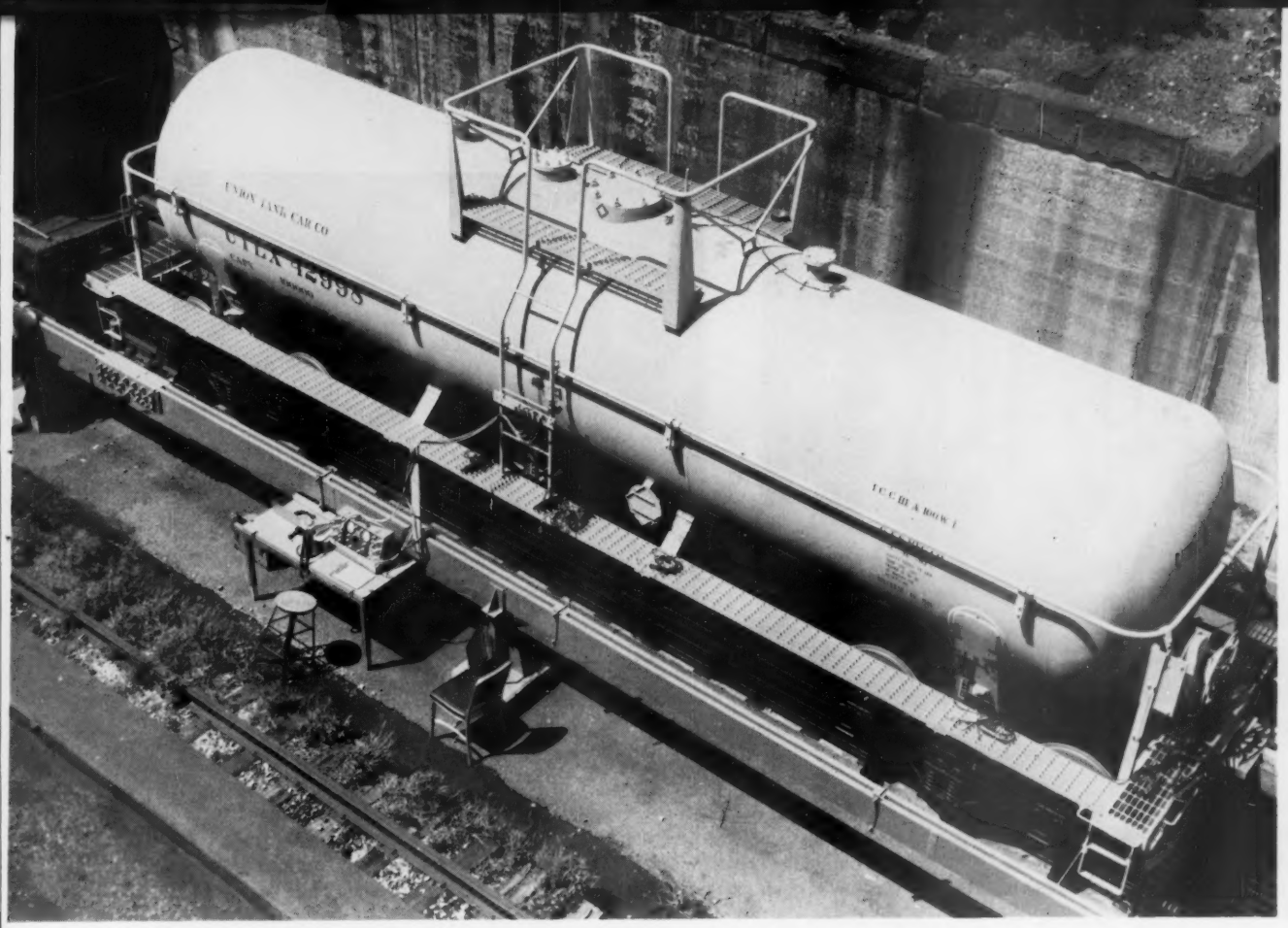
Extensive tests are being conducted to determine the feasibility of using electronic instruments to measure the reaction of forces developed during closure of draft gears. A special load cell arrangement, occupying the space under the draft gear, enables reaction forces to be measured up to 1¼ million pounds. A high-speed Polaroid camera is used to photograph the peaks recorded during the reaction study. While use of this equipment is still under study, indications are that it will provide more precise data not heretofore available from readings obtained on the old chronograph style reaction equipment.

The 27,000 lb tup, formerly used with the draft gear machine, has been replaced with a new tup of the same weight, but 25 in. shorter in length. This will increase the testing range for conventional gear testing, and will permit a 54-in. fall for testing the new long-travel, high-capacity gears. With a 4½-in. gear travel, gears up to 131,700 lb can be tested. A new electrical control system for the testing machine will be installed this year, replacing the 30-year old equipment.

### *Roller Bearing Greases*

Roller bearing grease tests are continuing, with emphasis on the performance of the greases in a full-scale testing apparatus. Recent approval of a simulated 8-week road test, instead of evaluation based on 1½ to 2 years of actual road tests of cars in high mileage service, will permit faster certification of new greases.

A second test machine has been built for examination of mixtures of greases. Electron microscope studies of new and used greases have been made in conjunction with this machine. The micrographs indicate the ratio of fiber length to the diameter might constitute a desirable method for determining the severity of breakdown of a grease. A metal-shadowing unit has been installed to better define the grease fibers. The compatibility of greases is being studied to obtain data on their performance when greases of like soap base and




**NEW DESIGN** domeless tank gets compression test.

unlike soap base are mixed in the same bearing. A study of the half-scale penetrometer is being made to develop a quick method of penetration analysis without using large quantities of grease.

### *Brake System*

Several projects are being developed on parts related to the brake system. The Research Center is working on testing of air brake hose gaskets in a new cold box. Ambient zero temperatures can be produced by using dry ice. This work is in its infancy. The object is to obtain information on the effect of low temperatures on the efficiency of air sealing quality of the gasket. Optimum results of the research will permit revisions of the specification to require such testing as an acceptance standard for hose gaskets.

### *Journal Bearing Lubrication*

Vibration tests of brake beam supports are continuing, as also tension tests to determine the hold qualities of new design hose clamps for trainline air hose.

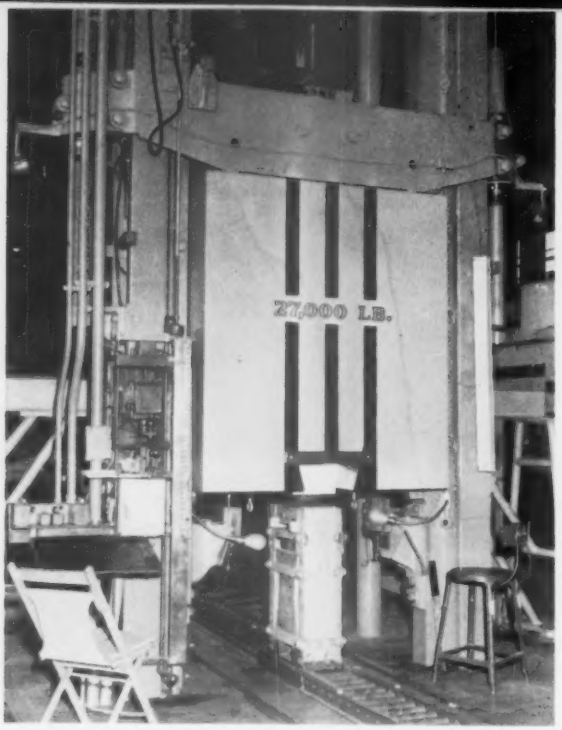
Study of the hot box problem in conjunction with the lubrication of journal bearings and bearing development continues a major AAR research project. The mechanical laboratory now has five major testing machines and several smaller machines of special design, all being used in special phases of investigation of various components making up the solid journal box assembly.

Impact tests in connection with investigation of lubricating devices for freight cars are being made by means of a laboratory developed device consisting of a standard freight car truck with a collarless axle. This enables better observation of movements of the parts of the journal box assembly due to impact. Many varieties of lubricating pads and several mechanical lubricators have undergone tests in the newly expanded oil and grease chemical laboratory.

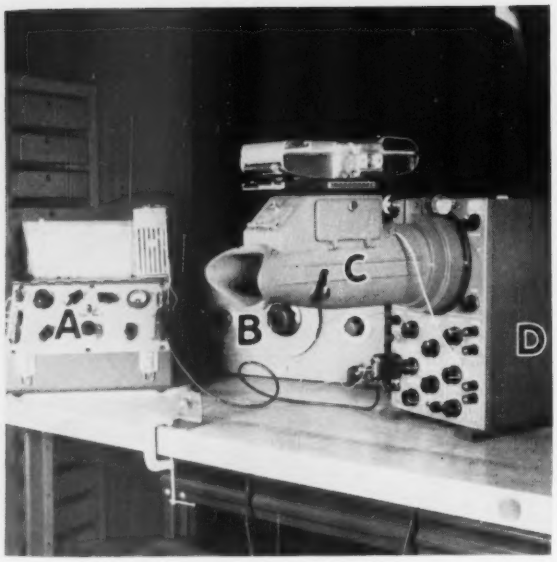
Analytical devices are being used to examine various lubricating additives for reducing friction, which is considered vital in overcoming the hot box problem. A pendulum machine, designed and built by Armour Research Foundation, is used to evaluate these additives. After screening them for possible use in car journal oils, they will be studied on an apparatus built by Franklin Institute, previously used for studying bearing metals. The present program will put emphasis on studies in regions of boundary lubrication and when full bearing-journal contact occurs.

A calendaring machine, built by Armour Research Foundation, using a full-scale journal and bearing, is being used to analyze the rate of viscosity index loss of car oil containing additives. At present, the 100 viscosity index car journal oil used by the railroads is obtained either through restrictive refining methods, or by the addition of viscosity index improvers. Results show the improvers generally reduce about 6 or 7 points in the first few hours of test, thereafter the viscosity index of the car oil with improver remains steady.

The calendaring machine is also used in an examination of corrosion of babbitt bearings by oleic acid in car journal oils. Concentrations of about 1% show no corrosion, and it can be safely used in the oils without harmful effects to the bearings. The machine is being redesigned to evaluate chemical additives in car




DRAFT GEAR positioned for test under new 27,000-lb tup of draft gear test machine.




STRAIN AMPLIFIER, (A), audio oscillator (B), cathode ray oscilloscope (C) and polaroid camera (D).

journal oils under boundary lubricant conditions.

A device, designed and built by laboratory personnel using the Cannon-Fenske viscosimeter, is used to investigate the viscosity of car oil at subambient temperatures. An evaluation procedure was set up and the viscosities obtained were correlated with an ASTM chart.

### *Journal Bearing Development*

Different metals, alloys and combinations are being tested in dynamic friction machines to compare their suitability as bearing metals, both with each other and with the new standard bronze babbitt-lined bearing now in use. A newly developed aluminum alloy bearing has been tested in in the full scale bearing journal testing machine, as also a new design cartridge-type bearing. Service records of several experimental design solid type bearings are being followed.

The recent change in the design of journal bearing lugs to improve their strength was based on continuous surveys started four years ago.

The AAR standard practice system of controlled clearance bearings became effective in March of last year. This system was developed after extensive research work.

During the past year, research personnel have cooperated with the Committees on Brakes and Brake Equipment, Geared Hand Brakes, Brake Beams, Journal Box lids and others, in conducting certification tests, revisions of test specifications and development of test methods.

A new test rack for testing automatic brake slack adjusters for freight cars is in service, and several have been tested to date.

### *Diesel Locomotive Wheels*

Tests are continuing on diesel locomotive wheels, this being a cooperative study with the Technical Committee on Wrought Steel Wheels and Axles of the American Iron and Steel Institute and Electro-Motive Division of General Motors. Road tests were made last year, under conditions of braking and track curvature on the D&RGW. Stress measurements were taken on a standard production A-40 wheel and a specially machined A-40 wheel mounted on the same axle under the EMD test car. Data obtained included such measurements as wheel stress, temperatures, speed and brake pressures in both passenger and freight operations over 2,000 miles of track having heavy grade and sharp curve conditions. Additional information was obtained by placing the test car in a CB&Q passenger train between Denver and Chicago. A progress report, based on the above tests, is now in preparation.

A brake shoe and wheel testing machine, purchased from the Pennsylvania, is being installed. This machine will be used not only for brake work but also for exploring stresses in diesel wheels. The diesel wheel stress job will be its first assignment.

### *Atomic Energy on Railroads*

The use of atomic energy on railroads has been studied for some time at the Research Center. In January of this year, a report was issued covering investigations to date. Further study is being made. Some of the goals sought in the use of atomic energy are outlined as follows:

1. Nuclear energy as a primary source of power for locomotives.

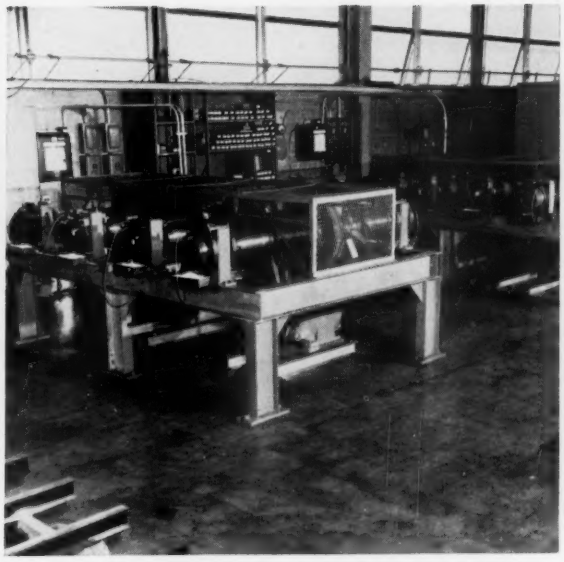
2. Nuclear energy as a means of sterilizing foods for shipment in railroad cars without refrigeration presently used for perishable shipments.

3. The use of nuclear energy as an inspection and quality control tool, also its use as an experimental tool in establishing wear rates, oil contamination, and in other investigative processes which the peculiar nature of atomic energy makes appropriate subjects.

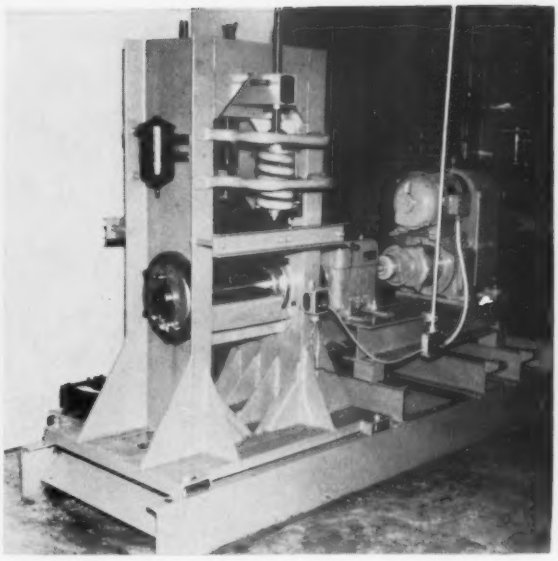
4. Safety considerations in nuclear energy use.

### *Miscellaneous Tests*

The passenger car compression testing machine was used during the past year to test a completely new tank car, designed and built by the Union Tank Car Company. This car does not have the usual type underframe and does not contain an expansion dome. Static and compression tests



**LABORATORY-BUILT** roller bearing grease testing machine accelerates testing procedures.



**CAR OIL** containing additives is tested on this machine to determine rate of viscosity loss.

were made as also were tests to determine the effect of stresses in tank car tank heads due to lading surge to impact. This is the first time a freight car has been tested in the compression test machine since its installation. A new design passenger car was tested during January of this year. Several requests from builders have been received for compression tests.

Research personnel are checking and approving application drawings of tank car safety appliances. This relieves committee members from doing this work, and expedites the approval of applications.

Laboratory experiments on corrosion of freight car trucks have been completed. The investigation covered various protective coatings and metal treatments. The report is now in the process of preparation for submission to the interested committee.

A study of the types of diesel fuel oils used on railroads is being made by reviewing reports of research conducted on individual railroads. It is desired to determine the difference between the regular distillate fuels and what are commonly known as economy distillate fuels which will require analysis primarily in the values of the cetane number and the carbon residue content. The results of these investigations, plus literature searches and personel contacts, will be used as a basis for further studies on fuels and lubricants when a diesel engine is acquired for testing and research at the new AAR laboratories.

A study is being made in cooperation with the Freight Loss and Damage Prevention Section and the National Perishable Freight Association to determine the best way to reduce the extensive damage claims made as a result of beef falling off hooks in transit. No testing has been done, but a program is under study which will analyze and summarize data from previous tests, and provide a background for future tests should there be sufficient material available.

Continuing tests are being run on the investigation of possible methods of increasing the rate of output from alcohol heaters used in refrigerator cars. A new fuel mixture has been developed, consisting of a two-to-one by volume mixture of methanol and isopropanol. This fuel increases the maximum rate of output from the heater by 30 per cent and provides an additional 48,000 Btu per heater tank of fuel. Modifications of the design of the heater are being studied, which might provide an additional increase in heat output.

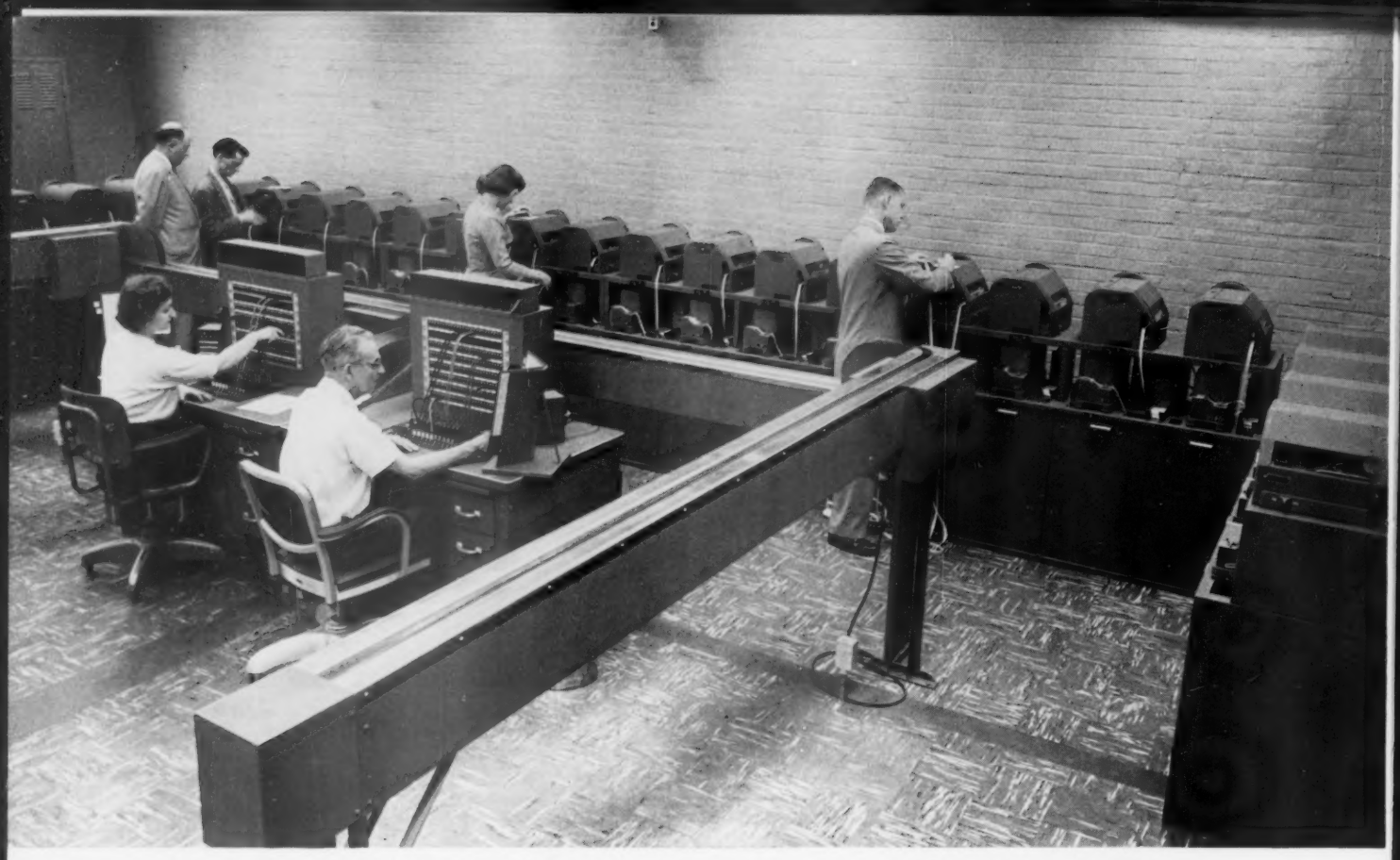
Considerable work has been done to determine the performance of diesel fuel oil filters. Procedures have been developed and data secured on six different filter cartridges, with the same filter box. Evaluation of the data will include determination of the filter surface area needed for minimum filtration costs. Test procedures are also being developed to relate contaminant particle size to efficiency of filtration. Special filtering problems arising from the use of economy grade fuels will also be studied.

Trial procedures in the study of life expectancy of freight car snubbers have been abandoned. This includes the latest one where sand and water were sprayed on the friction surfaces. The amount of wear was not sufficient for evaluation. Studies are now being made as to the possible use of a car equipped with a large oscillator, which is believed will duplicate and accelerate ordinary service conditions.

### *Future Research*

W. M. Keller, executive vice-chairman and director of research, firmly believes that "no one in any field in this progressive age is so satisfied with the present state of affairs that they do not see further opportunity for improvement in the future. The possibility of better wheels, axles, journal boxes, car structures, locomotive parts, are all susceptible to further improvement.

"To those who say to AAR personnel that railroad equipment has not improved much during the years, they are quick to point out that a review of the various car, track and locomotive cyclopedias 25 years old, in comparison with the latest issues, will answer any skeptic's questions on this point."



DATA GATHERING NETWORK automatically switches train consists to car location information center (CLIC).

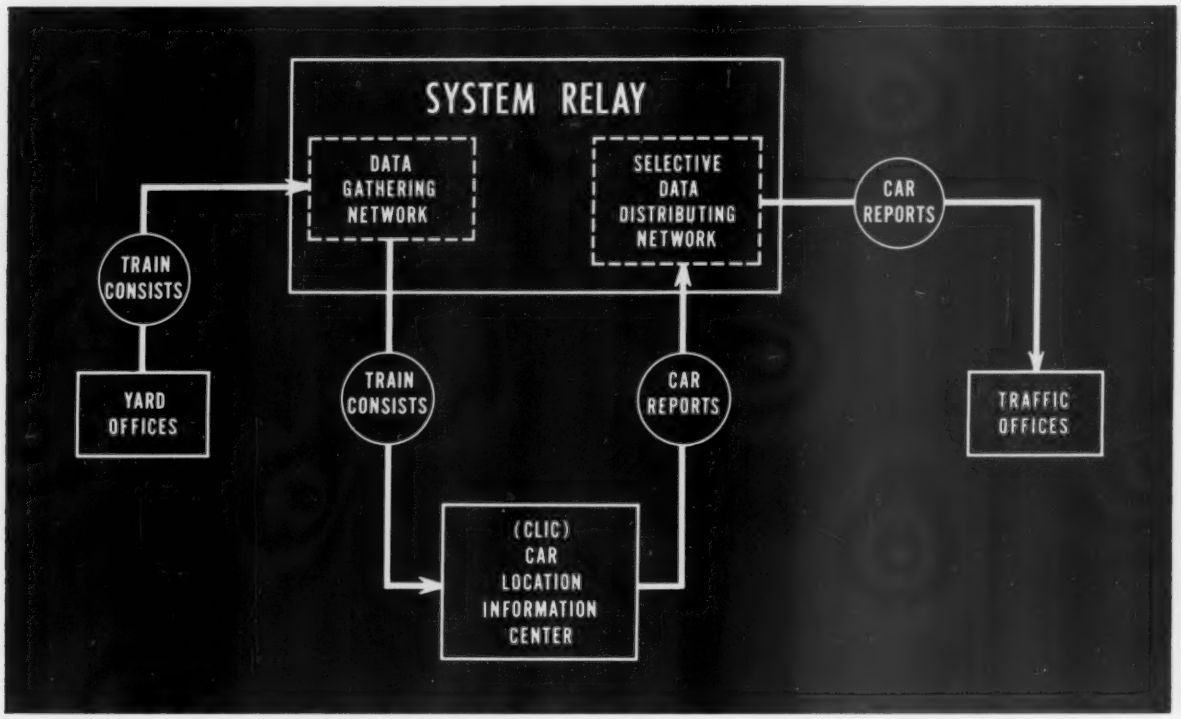
# How C&O Speeds Car Reports

## . . . TO SHIPPERS

Within 2 hours after a train leaves a Chesapeake & Ohio yard, reports on the cars in the train are in C&O traffic offices. In addition to this prompt car location information, the train consist is "flashed" to the next major yard where the train is to be classified, so the yardmaster has advance information enabling him to make up his switch list. Thus the train can be promptly classified when it arrives at that yard.

To provide this car location and consist information promptly, the road has installed a systemwide printing telegraph network. Train consists are sent from more than 100 locations, including 49 major yards, to Huntington, W. Va., where they are processed through IBM equipment to produce individual car reports. These reports are sped by Teletype to 54 traffic offices.

Mechanization of reporting procedure is a recognition of shippers' urgent need for prompt car location information. This car reporting system has just gone "on stream" to handle merchandise cars, and will later include reports on coal. On the C&O, all freight except coal is termed merchandise. The 49 major yards at which trains are classified and car reports originate spread from Newport News, Va., on the east to Chicago on the west.




**BLUEPRINT FOR CAR REPORTING** is this flow sheet which shows how consists from 49 yards are sent to CLIC for processing into car reports for distribution to 54 traffic offices.

## Here's the Way the System Operates

Let's follow a car report, from origin to destination, through the C&O system. When a car originates, or is delivered to the C&O in interchange, a short section of perforated tape containing pertinent waybill information is prepared at the yard office. This short tape, one piece for each car, is filed in a rack with the waybill.

When a train is made up, the waybills are put in train order, and the short sections of tape, in the same order, are processed through printer equipment to produce a long tape. A statistical heading which includes the train information is added to the beginning of this consist tape. Totals including empties and tonnage are added to the end of this tape.

Prior to or on train departure, this tape is placed in a Teletype transmitter-distributor for sending the consist to the next major yard where the train is to be classified, or cars added or removed. On the same transmission, the consist is also sent to the system relay office at Huntington.

### *In and Out of "CLIC"*

Here the incoming circuit upon which the consist is received is switched to one of the trunk circuits going to the Car Location Information Center, where the consist is received as a perforated printed chadless tape and as a hard copy. Now that CLIC has the consist in tape form, it is ready for processing through IBM equipment.

The first step is to run the tape through a tape-to-card machine to produce punched cards, two for each first reporting and one for each one passing or empty car in the train. The cards are then manually sorted according to destination traffic territories. Cards are then grouped for the various traffic offices and punched with the traffic office codes.

Following this operation, the cards plus a prepunched header and signature card are put through an IBM 063 card-to-tape machine.

The tape from the IBM 063 is fed automatically into a special shelf-mounted transmitter supplied by Western Union. Operation of the transmitter is automatic over outbound trunk circuits to the system Teletype relay office, where torn-tape switching is performed on a Western Union III system to send the car report information to the various origin and destination traffic offices.

In addition to the benefit of fast car reporting, which accounts for 95 per cent (word-wise) of the traffic, this Teletype network also handles a small volume of messages concerning car locations between the traffic offices and CLIC. Part of this latter office is a trace bureau, which keeps a record of all car movements. Thus if a shipper calls a C&O traffic office asking for information as to his car's whereabouts, the office sends a request to the trace bureau.

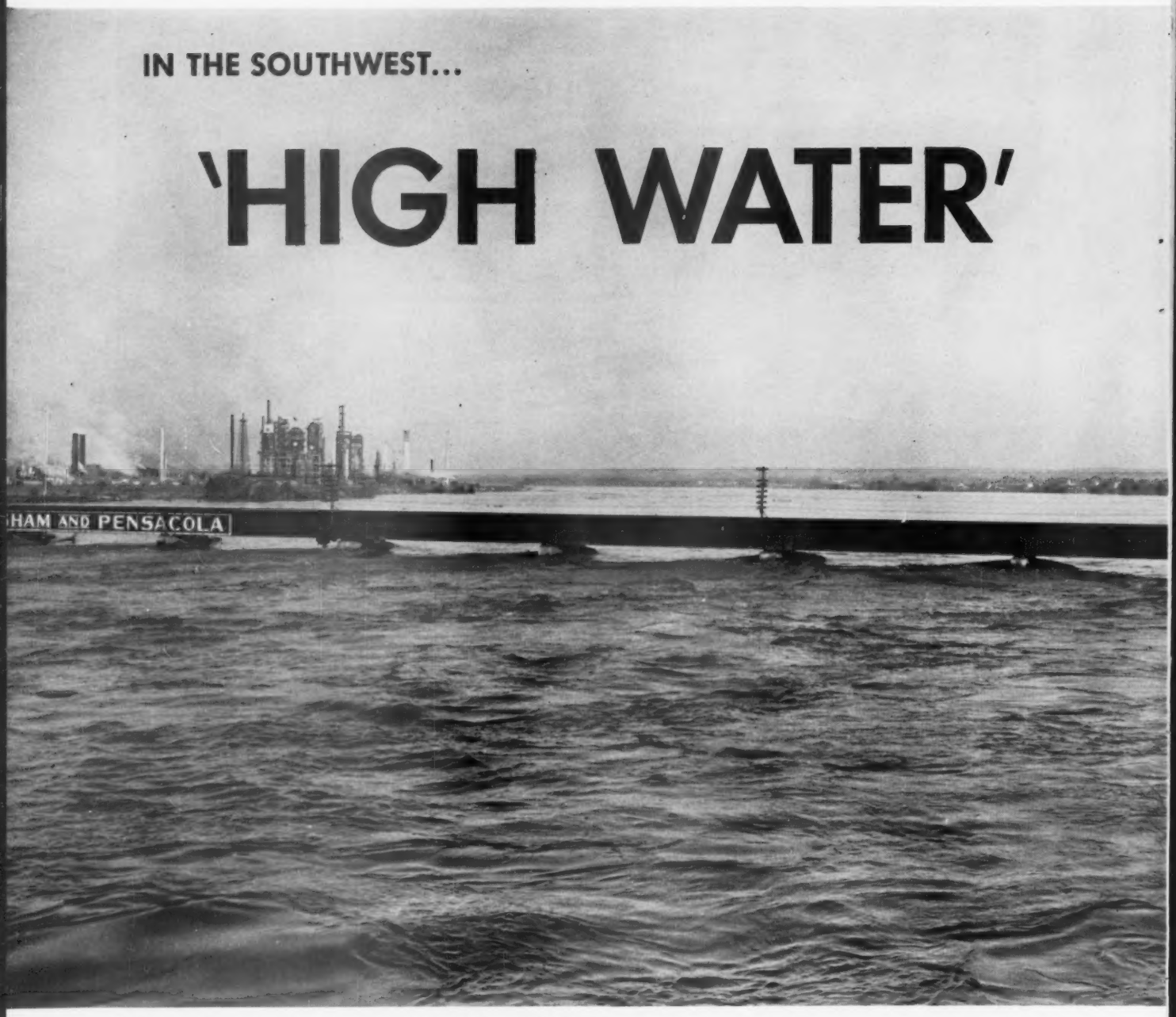
Its reply is prompt, often within a few minutes. This type of message traffic accounts for about 5 per cent word-wise of the volume handled by the new system-wide Teletype network.

"Aim of CLIC is three-fold," says M. I. Dunn, vice-president operations. "First, to provide the ultimate in prompt information to patrons; second, to effect savings to the railroad in freight car utilization, distribution and reduction in terminal delays; and third, current production of up-to-the-minute operating statistics and reports." (For a more complete description of this C&O system, see the July issue of Railway Signaling & Communications.)

Basically this system is designed to: (1) convert information to "machine language," (2) transmit the machine language to points for use, (3) machine process information to produce recapitulations of like items, and (4) distribute the information either as separate items or as recapitulations to the "final consumers."

## IN THE SOUTHWEST...

# 'HIGH WATER'




Arkansas river at flood stage under Frisco bridge at Tulsa.

These words, transmitted by wire, telephone, radio and word of mouth were responsible for many a sleepless night for railroad maintenance forces and many delays to service in the past 2½ months. Incessant rains, and no less than 560 tornadoes in April and May alone, caused widespread damage, Texas and Oklahoma being worst hit. As this issue went to press, inhabitants of the Southwest were heaving sighs of relief as the downpours abated. But the Weather Bureau was ominously predicting more rain.

Oklahoma Publishing Company Photo

**ROCK ISLAND** bridge over the Cimarron river at Dover, Okla., at peak of flooding.

**DEBRIS** is cleared away from piers on Frisco span across Arkansas river with crane to reduce lateral pressure.

**NEAR DOVER,** Okla., the raging Cimarron river washed out the Rock Island line shown here being reconstructed.

Oklahoma Publishing Company Photo

**BULLDOZER** is moved out onto Rock Island span over Cimarron river at Dover, Okla. One toppled into river.

THE drought which had laid waste large sectors of the Southwest came to an abrupt end last April. With the rains came widespread damage to railroad facilities. The first damage of any consequence to a railroad in the Southwest apparently came on April 27 when 3 in. of rain fell around Encinal, Tex., some 40 miles north of Laredo, and washed out Missouri Pacific tracks both ahead of and behind the "Texas Eagle." The train, with 45 passengers aboard, was temporarily stranded. The same day the T&P reported train delays of several hours due to high water over tracks at Jefferson in east Texas.

But this was only the beginning. The following day every major river in Texas was at or near flood stage. Streams feeding the Rio Grande washed out tracks near the Mexican border. Towns were totally isolated.

On May 2, some 6 in. of rain fell in Fort Worth, Tex.—the heaviest rainfall in that city in seven years. The Trinity river overflowed its banks but caused negligible damage to railroad facilities in the Dallas-Fort Worth region.

### *Frisco, Santa Fe Hard Hit*

Hardest hit railroads in the Southwest were the Santa Fe and the Frisco. Others, including the Rock Island, M-K-T, Missouri Pacific, T&P, Cotton Belt, Fort Worth & Denver, and Midland Valley, suffered serious damage too. Most aggravating was the fact that trouble occurred, mostly in the form of relatively minor washouts, at many different locations simultaneously.

In Oklahoma, the Cimarron river was generally considered to be the worst offender. At Dover, flood waters washed out the approaches to the Rock Island's bridge, on its north-south main line. Service was maintained by rerouting traffic over the Frisco. Meanwhile, the Frisco lost 28 panels of a bridge over the Cimarron between Ames, Okla., and Okeene. All in all, the road reported on May 20 that its line from Beaumont, Kan., to Enid, Okla., was out in as many as 20 separate locations. At flood peak, the Cimarron flowed at 170,000 cu ft per sec.

At various times during the emergency, roads operating in the Texas-Oklahoma region were forced to route their traffic over each others' lines as one section of track would be restored to service only to have another washed cut.

The Frisco advised that it had suffered "considerable difficulties" from

United Press Telephoto

**COTTON BELT** tank car loaded with 9,764 gal of sulphuric acid perches precariously over east fork of Trinity river north of Lavon lake in Texas after being derailed in crossing flood-damaged trestle.

floods and high water. In addition, the road suffered the "total destruction" of its depot at Fremont, Mo., in a tornado. The Frisco branch-line bridge across the Red river between Davidson, Okla., and Vernon, Tex., was totally washed out and, at this writing, no decision had yet been made as to whether or not it would be replaced. Washouts also occured between Okmulgee, Okla., and Muskogee and on the Little Black river between Poplar Bluff, Mo., and Hoxie, Ark., resulting in two- to three-day delays to service.

Lake Texoma, on the Texas-Oklahoma border, reached record levels as it was fed by the flood waters of the Red river and other tributaries. Heavy embankment damage was suffered by the Frisco as a result of wave action on the lake. Delays to service were caused by the high water which flowed a bare 1 ft beneath the road's span across the lake at Lakeside, Okla. On the banks of the lake, railroad forces deposited some 50 cars of "one-man boulders" to combat the wave action.

Washouts hampered traffic on the Santa Fe at many locations in Oklahoma and Texas. The road's Cimarron river bridge at Yale, Okla., on a secondary line, was out of service weeks as one pier, undermined by flood waters, settled 9½ in. This bridge, used jointly by the Katy, disrupted service on the latter road's line between Osage and Oklahoma City. A full report on the Sante Fe damage is not yet available.

At Lampasas, Tex., May 13, severe flooding climaxed 26 consecutive days of thunderstorms and tornadoes in the state. A 10-ft high wall of water descended upon the business section of the town, killing four persons and lifting the Santa Fe depot completely from its foundation as Sulphur creek overflowed its bank. Washouts disabled several lines in the vicinity of the Cimarron river between Guthrie, Okla., Enid and Stillwater and between Waynoka and Buffalo.

### *Santa Fe Loses Main-line Span*

The most serious flood damage to the Santa Fe occurred on June 2 when its bridge across the Washita river between Dougherty, Okla., and Gene Autry was washed out. The truss span, on the road's main line south of Oklahoma City, had been weakened by recurrent flooding for over a month. Fourteen cars of a 70-car northbound freight, which was passing over the 403-ft span when some 200 ft of it collapsed, plunged down the embankment and into the river.

While the bridge was out of service, Santa Fe traffic was routed over Rock Island lines. Elsewhere, the Santa Fe announced, it lost "several" pile trestles on branch lines and suffered "quite a few" washouts of track. The Fort Worth & Denver, meanwhile, reported that during May it had two bridges washed out, four others damaged, and some roadbed washed away.

The devastating tornado which swept through the outskirts of Kansas

**WASHOUT** of Rock Island line at Zyba, Okla., was repaired before flood waters had fully receded.

**MISSOURI PACIFIC** bridge over the Walnut river near Winfield, Kan. Three 60-ft steel spans were lost.

City on May 20 toppled a 16-ft by 40-ft Missouri Pacific depot, overturned several box cars and destroyed a grain elevator. Section and tool houses were "blown away" and a newly installed CTC case was reported demolished in the twister. "Flood and windstorm damage to Missouri Pacific properties during May reached an estimated total close to $250,000," the railroad's engineers stated, "with total damage for April and May approximating $475,000. Had the cresting Arkansas river damaged the bridge at Yancopin, some 40 miles north of McGehee, Ark., damage might have run substantially higher, but the high mark of 37.46 ft was reached June 3 and the bridge held."

A spokesman for the MP reported that, "while heavy rainfall and consequent flow caused the damage in most cases, in at least two instances secondary causes were also to blame. At Fort Gibson, Okla. (near Muskogee), the dam across the Grand river piled up water to such an extent that government engineers opened the flood gates for maximum discharge of the impounded water, and the resulting flood washed out our tracks and service was interrupted for a few days. At Corwin, Kan., a bridge was knocked out of line when a 40-ft highway bridge, washed out upstream from the railroad structure, was flung against it by the force of floodwaters."

At Winfield, Kan., the MP's bridge over the Walnut river went out. Three 60-ft steel spans were lost and two concrete supporting piers were turned over. Replacing this bridge will cost around $75,000, the road advised. Also in Kansas, near El Dorado, a 12-panel MP trestle over Bird creek lost seven of its timber panels and service was interrputed for about 48 hours.

The Texas & Pacific reported that water stood at a depth of 3 ft over its tracks between Boyce, La., and Zimmerman for a distance of some 200 ft. To maintain service on the line, the road borrowed a steam locomotive from the FW&D. Some slide damage was also reported, closing one line for a week.

On the Cotton Belt a trestle and portions of roadbed near Lavon, Tex., were "partially washed out" when U. S. Engineers opened the flood gates of Lavon dam. Trains were detoured around the region for several days.

The Red river reached flood stage at various locations early this month causing the washout of a Quanah, Acme & Pacific bridge at Quanah, Tex., where 19 spans were destroyed.

As residents of the flood-stricken area hoped fervently for a return to normal, the U.S. Weather Bureau issued the discouraging forecast that the "cool, rainy spring" in the Southwest is expected to continue on into the summer.

## Railroading  After Hours with Jim Lyne

**RECRUITING COLLEGE MEN**—I've just seen an attractive, illustrated brochure—issue by the Rock Island and entitled "Career Opportunities in Railroading." The purpose—frankly announced in a foreword by President Downing Jenks—is the recruiting of likely college graduates for a career in railroading, and on the Rock Island in particular.

The booklet pictures various railroad occupations and tells specifically about the Rock Island's program for "trainees"—in its operating department (104 weeks) and its freight traffic department (64 weeks).

Mr. Jenks asserts that railroading is "a dynamic industry which offers today's college graduates greater opportunities than ever before."

**WHAT OPINION LEADERS THINK**—The other night, coming away from a meeting at Hot Springs, Va., I ran into an old friend on the train—Phil Swain, long the editor of Power magazine. He is now doing some forecasting of industry trends, based on a study of technological developments; and he asked me if I thought the railroads would surmount their present difficulties, and get on the growth curve once more.

My answer was, emphatically, *yes*. And I went on to tell him about inherent factors in the railroads' favor—once they can get rid of some of the artificial drawbacks that are *not* inherent in railroad transportation.

To my way of thinking, getting the basic economic and technological facts of the railroads' position into the hands of serious students of industry, such as Phil Swain, is a most important part of the railroads' public relations job. Almost everybody is interested in an industry that, they believe, "has a future"—and there's certainly a future for the railroads if the political barnacles are scraped off.

**SMUCKER FORMULA**—I got a lot of instruction in "communication" (as always) at the Railroad Public Relations Association annual meeting, down in Mississippi a few days ago. Among a lot of other educational features, they had on the program an educator who demonstrated techniques he has developed for getting groups of people to come up with useful information—while avoiding a lot of argument.

In this connection, I always feel like going back to DT&I's Dave Smucker's formula for a successful conference. This formula consists, first, in getting the conferees to agree on what year it is and what city they are in—and then to proceed to other things they can agree upon. Only after everything the group can agree upon has been brought out, do they then get to talking about the questions they don't agree on.

**BETTER TERMINOLOGY**—The public relations officers have a committee on railroad terminology (Clif Massoth, IC, chairman)—which has run into some resistance to suggested changes in terms. To replace "grade crossing," the term "road crossing" was proposed—but, the trouble is, a "road crossing" could also be an underpass or an overpass. What's wrong with the British term—"level crossing?"

Another suggestion which isn't unanimously acceptable is "extra train" for "drag." One alternative is "tonnage train"—which might take care of a line-haul train, but wouldn't include "transfer runs." I'd be glad to pass along to the RPRA authorities readers' suggestions for improvements in present terminology.

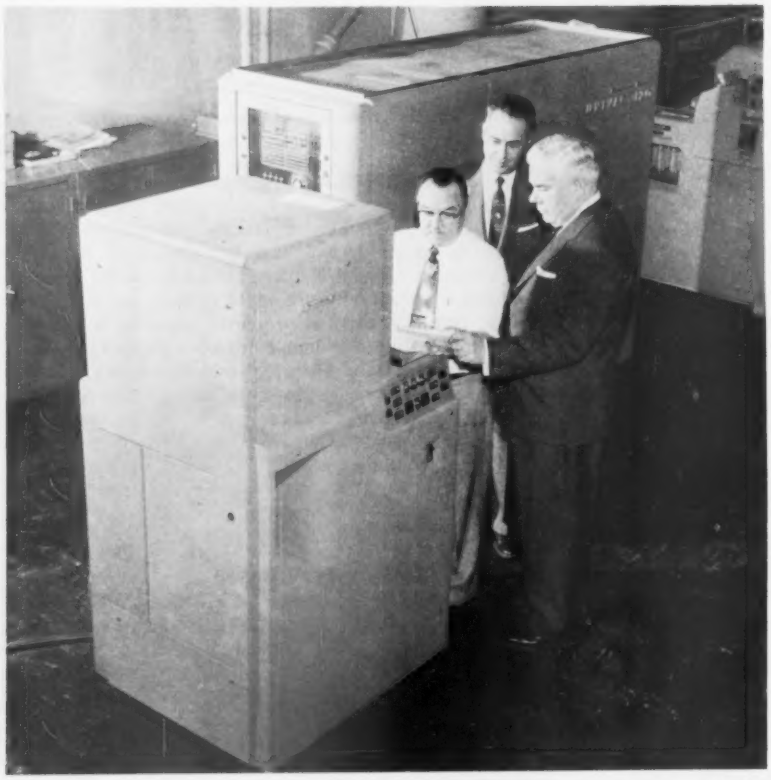
# What's the Right Size Computer?

Some railroads just aren't able to use the king-size "giant brains." Either they don't have the work volume needed to get economic use of the high-cost equipment or, often, it's simply a matter of not being quite ready to take the big step into broad scale "computerization." Still, recognizing the values inherent in electronic data processing, they want to break loose from the confines of what are now obsolete punch-card techniques.

Here's what the Boston & Maine is doing. It's setting up a system of vacuum tube accounting with what might be called "little giant brains." But this is just a step toward a centrally oriented, mechanized, reports and accounts system that will probably hinge on a medium size "Univac File Computer."

Boston & Maine management is convinced it can attain substantial savings in three accounting areas embraced by a newly set up system of electronic data processing—freight revenue, car accounting and disbursements.

Two small Remington Rand computers—a Univac 60 and a Univac 120—were installed at Boston last September, and the road's entire data processing procedure is being revamped. Freight, agency and passenger accounting functions have been consolidated into a single revenue office and by the end of the year, or possibly as late as next spring, a central machine bureau for mechanized accounting will be set up.



**INTERIM SERVICE** is being obtained by Boston & Maine from small-size Univac 120 (above) and Univac 60 units while road sets up procedures to be run through bigger "file computer" it is considering installing. A. J. Connell, director-methods and research, (center) confers with an operator and H. J. Conway, auditor of revenue (right).

This road was one of the pioneers in mechanizing its paperwork, installing punch card equipment to handle freight revenue accounting 40 years ago. Car accounting was included in the punch-card system in 1932 and the B&M payroll 12 years later.

According to A. J. Connell, director-methods and research, separate machine steps inherent in older methods of statistical work have been eliminated and "we have been able to explore new horizons in the widening field of automation."

"New applications are continually being studied by our newly formed methods and research department," Mr. Connell relates. These include stores accounting, a central inventory system and ticket accounting. Meanwhile, he asserts, "we feel we have made a good start toward what will almost certainly be a major administrative goal for all railroads in the years to come—achievement of wholly integrated processing."

When the changes now under way have been completed and basic procedures have shaken down, Mr. Connell hopes to "start planning for a file computer"—which might be described as a medium "giant brain."

Here's a digest of the way the

B&M is now putting its "baby Univacs" to work:

**Interline Apportionment**—On June 1, 18% of the road's interline accounting was being done by mechanical-electronic methods. By the end of 1958, the operation should be 100% "automated."

Waybills are collected daily from scattered B&M offices to set this operation in motion. From the waybills, such data as billing and receiving road identification, route, car number, amount of freight in dollars and weight, and commodity specifications, are punched into cards.

Individual car cards are collated with master cards already prepunched with verified divisional information covering like movements. The road keeps a file of these master cards on a "point to group" basis rather than maintaining individual cards for every possible movement on a point to point basis. What this will do when the master file is completely set up will be to reduce the card file space by 85%, Mr. Connell expects.

Once collated, waybills cards and master cards are fed into the "120" computer: individual waybill cards are added and appropriate percentages are applied to give each participating road's proportion of each freight charge.

There are about 500,000 such proportions to be computed monthly—Univac reportedly gives the breakdown at the rate of one a second. Under the old system, combining manual and desk calculator operations, it took an experienced clerk five minutes to figure the divisions for a single waybill.

An additional function of the Univac is the tabulation of the abstract figures into a multicopy report immediately after computation, permitting a copy of the breakdown to be forwarded to each participating road.

**Per Diem Payments**—For every car received or delivered at connections, a card is punched at Boston from waybill information, the cards then being run through the "120" on a program which automatically figures the number of chargeable days each car was on line. The result of this computation is punched into another card which is collated into a file set up by carrier. The cards assembled are then used for automatic tabulation of the per diem report to car owners each month. Mr. Connell says this system will reduce the time to get the needed data by 75%.

**Car Accounting**—For each calendar day, the road computes (on the Univac 60 in the auditor of disbursements' office) total car-miles loaded and empty, total extensions of net ton-miles, total extensions of gross ton-miles, and train symbol for every freight train on the system. The finished product is tabulated by train, train direction and division.

Source document is the wheel report from which 8,000 cards are punched daily for the 175 or so trains operated and 10,000 cars on line daily.

Cards are put through a tabulator summary punch machine and totals are obtained for cars loaded and empty, mileage, net tons and gross tons for each train between the points where the train runs. The summary cards are then put through the Univac 60 for extending net and gross ton-miles, after which the cards are tabulated.

Interdivisional freight trains are handled separately. By the use of master division cards, miles and tons are separated by division points. The finished report is used as information to the management and for filing ICC and AAR reports.

# People in the News

**ATLANTIC COAST LINE.**—**L. C. Walsh,** assistant general purchasing agent, appointed purchasing agent; **W.B. Creasy,** office assistant to general purchasing agent, named assistant general purchasing agent; **N.V. Oldenbuttel** and **L.F. Duvall,** assistants to general purchasing agent, appointed assistant general purchasing agents, all at Wilmington, N.C.

**BALTIMORE & OHIO.**—**Earl E. Mountcastle,** assistant general freight agent, Pittsburgh, appointed general freight agent, Baltimore, succeeding **George E. Dove** (Railway Age, May 6, p. 17).

**P. L. Hofstetter,** master mechanic, Punxsutawney, Pa., transferred to Cincinnati, Ohio, succeeding **T. I. Schachtele,** retired. **J. A. F. Craig,** master mechanic, **Baltimore & Ohio Chicago Terminal,** Chicago, succeeds Mr. Hofstetter.

**BALTIMORE & OHIO CHICAGO TERMINAL.**—**C. J. Howdyshell,** general foreman, Chicago, appointed master mechanic there, succeeding **J. A. F. Craig,** named master mechanic, **Baltimore & Ohio,** Punxsutawney, Pa.

**BESSEMER & LAKE ERIE—JOHNSTOWN & STONY CREEK—UNION—YOUNGSTOWN & NORTHERN—NEWBURGH & SOUTH SHORE—LAKE TERMINAL—DONORA SOUTHERN—MCKEESPORT CONNECTING—NORTHAMPTON & BATH—HANNIBAL CONNECTING.**—**D. M. Roderick** appointed assistant comptroller—cost and statistics of these roads, Pittsburg, Pa.

**BOSTON & MAINE.**—**Daniel A. Benson,** general manager operations, Boston, appointed acting vice-president—operations, replacing **Frank W. Rourke,** on leave of absence because of illness.

**CANADIAN NATIONAL.**—**Gordon E. Elliott,** assistant chief claims agent, appointed chief claims agent, Toronto, succeeding **G. L. McConnell,** retired.

**Walter Turnbull,** chief clerk, office of vice-president of operation, Montreal, appointed assistant to vice-president, operation, succeeding **J. C. Kenkel,** named European general manager, London, England (Railway Age, May 27, p. 40).

**J. Howard Easton,** senior research assistant, Toronto, Ont., appointed assistant transport economist, Atlantic region, Moncton, N.B., succeeding **J. D. Roynett,** named system assistant transport economist, Montreal.

**Frank W. Fullerton,** local storekeeper, Moncton, appointed district storekeeper, Edmonton, Alta.

**W. G. Little,** chief inspector, Central region, appointed assistant regional manager of real estate of that region, Toronto.

**L. M. Poitevin,** assistant district engineer, Quebec district, appointed district engineer of that district, succeeding **G. E. Corriveau,** named special engineer, Quebec, Que.

**CHESAPEAKE & OHIO.**—**Thomas A. Keefe,** assistant freight traffic manager, Detroit, appointed assistant to vice-president—merchandise traffic, Cleveland. **James H. Suthann,** division freight agent, Grand Rapids, Mich., succeeds Mr. Keefe. **Peter D. DeHamer** named general agent, Grand Rapids, succeeding **Leo W. Wood,** who replaces Mr. Suthann. **Ray Stewart,** district passenger agent, Lexington, Ky., named general agent, passenger department, at that point. **J. J. Lockwood** appointed trainmaster and road foreman of engines, Huntington, W.Va., replacing **H. E. Boss,** retired. **E. P. Whitfield** named trainmaster, Covington, Ky., succeeding **A. E. Hannes,** retired.

**CHICAGO SOUTH SHORE & SOUTH BEND.**—**William J. Raleigh, Jr.,** freight traffic manager, Chicago, appointed general traffic manager. **Frank H. Hiskes** named freight traffic manager in charge of rates and division matters.

**CHICAGO & NORTH WESTERN.**—**William G. Burns,** auditor of disbursements, Chicago, retired May 31.

**J. Robert Kunkel,** office manager to the vice-president in charge of traffic, **Illinois Central,** appointed to newly created position of assistant coal traffic manager, C&NW, Chicago.

**S. C. Jones,** general manager, Chicago, elected vice-president in charge of operations. **Carl R. Hussey,** assistant general manager, named to succeed Mr. Jones. Photographs of Messrs. Jones and Hussey were published in Railway Age, Oct. 1, 1956, p. 42.

**CLINCHFIELD.**—**G. H. Smith,** commercial agent, Columbus, Ohio, appointed district freight agent there, succeeding **Robert Naish,** who retired June 1.

*(Continued on page 82)*


SIDE-TRACKED
DIVIDENDS

*Modern communications can help you*

# Make full use of your rolling stock

Freight cars have to be the breadwinners today. That's why it's worth considering how much out-of-date communications may be costing you, in terms of idle cars and reduced freight revenues.

For example, one railroad found that a modernized communications system gave them two extra working days per month for every boxcar on the line! They did this with a surprisingly small investment, *using wires they already owned.*

Automatic Electric engineers can show you how similar results can be obtained on your road. We'll be glad to work with you and your Communications Superintendent in planning a modern, fully integrated communications system. Specifically, this means fast, automatic dial telephone service, available right where it's needed throughout your entire system. Your own private telephone system gives every employee a clear wire at any time of the day or night, to expedite freight or any other railroad business. It saves you money!

*For an interesting brochure about the road that is getting two extra working days a month from its rolling stock, just write or call Automatic Electric Sales Corporation (HAymarket 1-4300), 1033 West Van Buren Street, Chicago 7, Illinois. Ask for Report No. 105.* In Canada: *Automatic Electric Sales (Canada) Ltd., Toronto.* Offices in principal cities.

AUTOMATIC ELECTRIC

A member of the General Telephone System—One of America's great communications systems

GENERAL SYSTEM


1R54-C communications unit with shock mount, mounting base and close-up of dual vibrator.

# FOR RAILROADS ONLY . . .

## *Bendix*—and only Bendix—supplies a complete line of railroad radio built to AAR specifications*

The Bendix "1R" series of two-way railroad radio equipment is in a class by itself in the field of modern railroad communications. Acclaimed as a revolutionary development when introduced less than a year ago, the 1R54-C then was, and still is, the only 64-volt communications unit combining receiver, transmitter and dual-vibrator power supply in a single, compact case. New transistorized circuitry doubles audio output and keeps power drain at a minimum, resulting in substantial heat reduction and improved efficiency.

***Now, the "1R" series has been expanded to include similar equipment for operation from 12-volt DC and 117-volt AC power sources.***

***Available with a full line of AAR standardized accessory units.***

Already in use, or on order, by the railroads shown above, the Bendix "1R" equipment will help improve the efficiency of your communications, too.

Write today for details—Bendix Radio, Railroad Sales, Baltimore, Maryland.

*REG. U.S. PAT. OFF.

Bendix Radio Division

Railroad Radio Sales • Baltimore 4, Maryland

Bendix AVIATION CORPORATION


Santa Fe's Corwith Yard, Chicago. One of America's most modern freight terminals. (A print of this painting suitable for framing is available on request.)

## Mover of Modern Transportation—STANDARDIZED FREIGHT CARS

Transporting the products of our booming economy over the widely differing parts of the Great American Railway System requires speed, efficient freight movement and dependable, 24-hour-a-day performance.

Pullman-Standard engineering of these requirements into proved design and mass production techniques produced first the standardized PS-1 Box Car and then the PS-2 Covered Hopper, PS-3 Open Top Hopper, PS-4 all-purpose Flat Car and the new PS-5 Gondola.

Today, more than 10 years of "on-the-job" experience everywhere on the Great American Railway System, including the Santa Fe Corwith Yard, have proved the benefits of standardization to over 100 railroad-owners and their shippers. Write for brochures detailing each of the P-S Standardized Freight Cars.

*Pullman-Standard Car Manufacturing Company*
*221 North La Salle Street, Chicago 1, Illinois*

# HIGHLIGHTS OF THE 10TH ANNIVERSARY OF STANDARDIZATION


During 1956, the Pullman-Standard standardization caravan visited nine key railroading centers. Here, in New York City, the 75,000th PS-1 standardized box car (owner-road, the St. Louis-Southwestern Railway Co.) gets a top to bottom going over by railroad and shipper representatives.

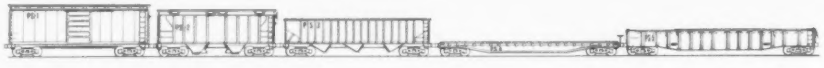
In Chicago, P-S Caravan visitors found the loading capabilities of the PS-2 Covered Hopper worthy of close study. Here, one interested visitor makes a car top inspection of the PS-2 circular hatch that makes handling of bulk lading smooth, fast and easy. Note reverse curve hatch lip that gives positive weather seal.


St. Louis was the scene of special ceremonies honoring the St. Louis-Southwestern Railway, purchaser of the 75,000th PS-1 Box Car. Here Mr. C. W. Bryan, Jr., President of Pullman-Standard (right) presents a model of this milestone car to Mr. H. J. McKenzie, President of the Cotton Belt.

The application of modern mass production techniques is just one reason why Pullman-Standard can offer cars that serve so much better. Here a special positioner turns the massive PS-1 underframe into a vertical position so that welds can be made by the preferred down-hand method.

Hundreds of detailed car condition surveys are made each year by Pullman-Standard's Field Service Engineers. Critical evaluations of these technical reports on P-S cars—and other makes—assure Pullman-Standard users of up-to-date design and engineering improvements on all P-S equipment.

*Built to serve best on the*
GREAT AMERICAN RAILWAY SYSTEM



*WORLD'S LARGEST BUILDER OF FREIGHT AND PASSENGER CARS*

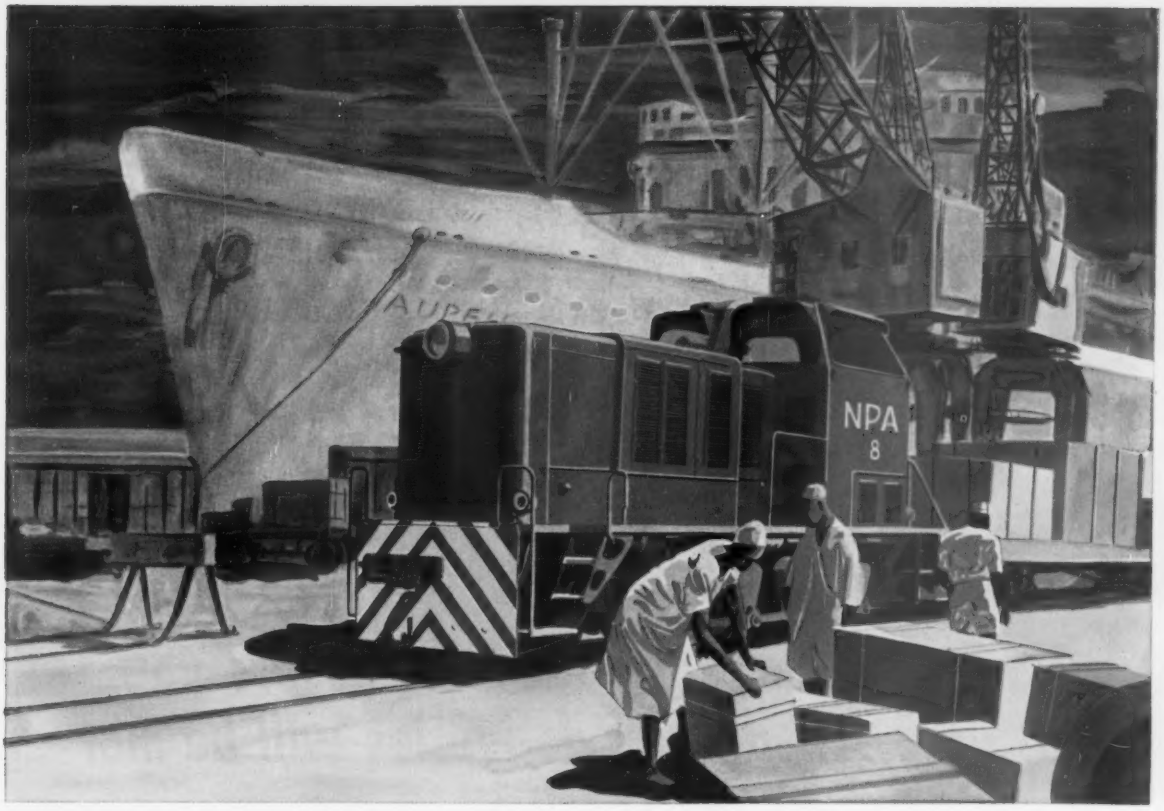
# PULLMAN-STANDARD

**CAR MANUFACTURING COMPANY**

SUBSIDIARY OF PULLMAN, INCORPORATED

**221 NORTH LA SALLE STREET, CHICAGO 1, ILLINOIS**

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON




## EIGHT MaK DIESEL-HYDRAULIC LOCOMOTIVES FOR NIGERIA

Rapid transshipment of goods does much to determine the importance of a port. As in many other countries, **MaK** diesel-hydraulic locomotives are used for harbor switching service in Lagos and Port Harcourt — the main ports of Nigeria, Africa. These locomotives, the modern wharves, and the up-to-date cranes at these ports provide all of the facilities for rapid rail-to-ship and ship-to-rail cargo transfer. All of this is vital to further development of the expanding economy of this West African nation.


Some technical data on these switchers:

**MaK** diesel-hydraulic locomotive, type 400 C with MaK four-stroke diesel engine.

| | |
|---|---|
| Rating | 400 hp |
| Engine Speed | 750 rpm |
| Power Transmission | Voith turbo-drive Model L 37 |
| Weight in working order | 85,980 lb |
| Axle loading | 28,660 lb |
| Gauge | 3-ft 6-in. |

We supply diesel-hydraulic locomotives with ratings from 200 to 2,000 hp.

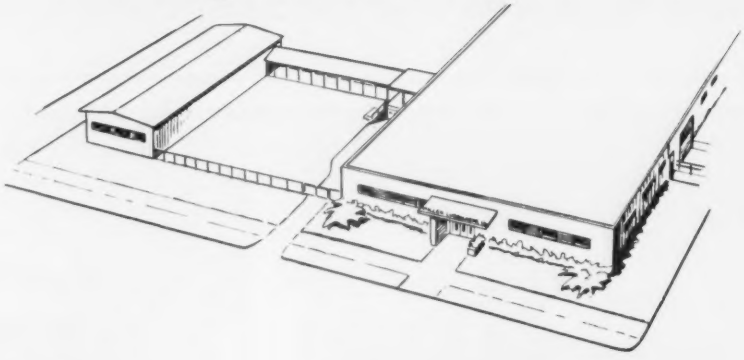
MaK

MASCHINENBAU KIEL AKTIENGESELLSCHAFT
GERMANY

# MILLER LUBRICATOR INSURES YOU

# *Immediate Delivery IN Any Quantity*

## *New manufacturing facilities assure you that your schedule of deliveries will be met as specified*



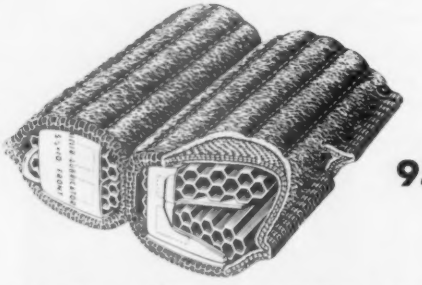
The new ultra-modern Miller Lubricator plant in Winona, Minnesota.

***Please let us protect your requirements***

$40 per carset (8 pads) for sizes:

4¼x8—5x9—5½x10—6x11

in any quantity—f.o.b. Winona, Minn.



**95,000 CARSETS TO DATE**

**MILLER LUBRICATOR CO.** **WINONA, MINNESOTA**

since new
conceptions in
components create new and better cars . . . it is difficult

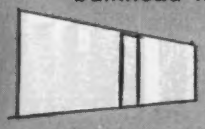
to show the impact of
INTERNATIONAL STEEL'S
corrective component
engineering
without picturing
completed cars
in our
advertisements

this has led many
to believe that we
are car builders.

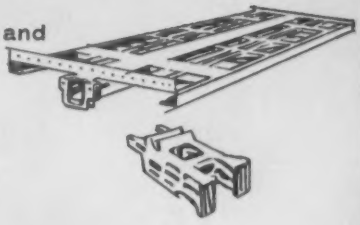
**we are not.**

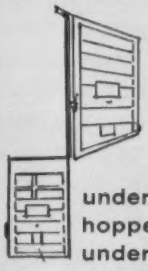
we are precision
fabricators of
correctively designed
**components**
such as . . .

underframes and bulkheads for
bulkhead flat cars, pulpwood
cars and piggy
back cars . . .
underframes,
side assemblies
and floors for
gondolas . . .



underframes, bulkheads and doors
for the unit load car . . .
underframes, side assemblies and
doors for box cars . . .





underframes, side assemblies and
hoppers for hopper cars . . .
underframes, side assemblies and
doors for refrigerator cars . . .
underframes for cabooses

component conception for profit potential . .

INTERNATIONAL STEEL COMPANY
RAILWAY DIVISION EVANSVILLE 7, INDIANA

# They snap-on—and stay on—

# WABCO® Dated Packing Cups

*"Quick" and "Easy"* are the words for WABCO Packing Cups. At the regular cleaning time, you snap them off, clean them and snap them on again. It is not unusual for these cups to provide satisfactory service for two or more cleaning periods under normal wearing conditions. Their high resiliency assures continuous cylinder wall contact with minimum leakage.

When you replace brake cylinder packing cups, seals and gaskets, be sure to specify the original brand, WABCO, and you'll get the same long service, time after time. The date of manufacture, mold number and piece number are molded into every part.

**Westinghouse Air Brake**
**COMPANY**
AIR BRAKE DIVISION WILMERDING, PENNA.

# Studs for NELWELD process machined from Youngstown cold finished bars

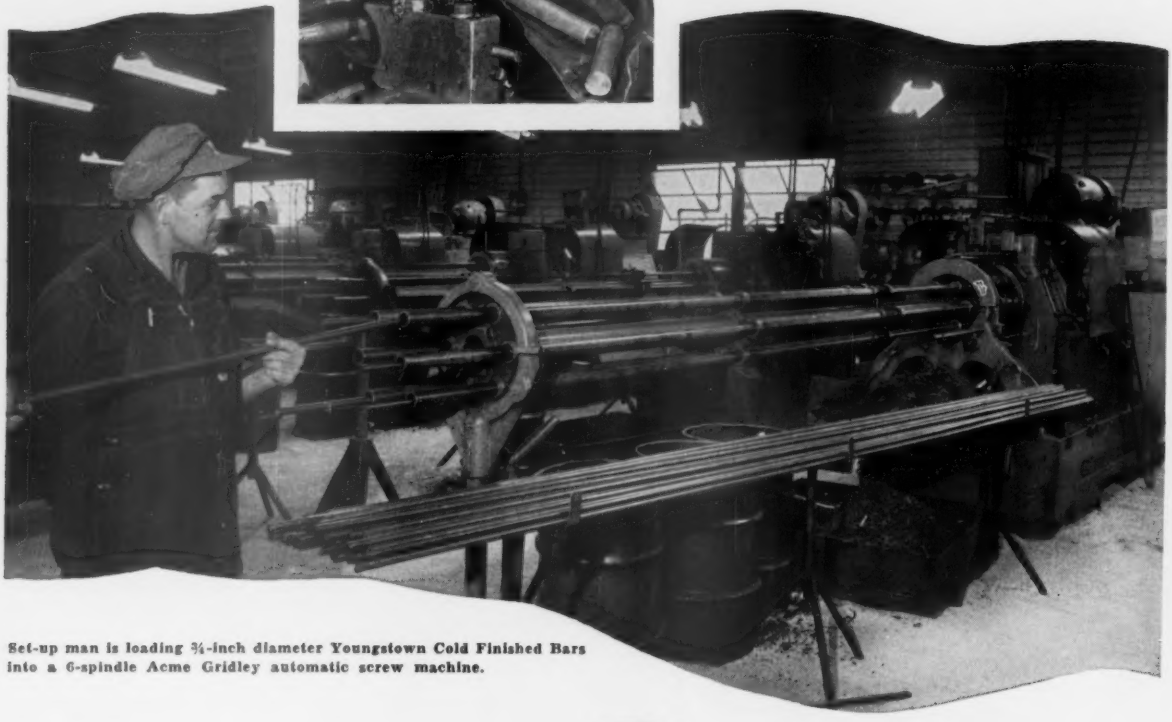
Progressive fabricators rely on the Nelweld method for fast, dependable end-welding of studs to steel surfaces. This novel electric arc process—utilizing flux-filled steel studs—substantially reduces direct fastening costs when used to replace conventional time-consuming methods such as drilling, tapping, hard welding, through-bolting or the securing of straps and rivets.

To maintain their world-wide reputation for product quality and uniformity, Nelson Stud Welding, a division of Gregory Industries, Inc., uses Youngstown Cold Finished Bars as the basic material for stud production.

Youngstown Cold Finished Bars provide high machinability and greater uniformity of composition, structure and surface finish to help you increase production of more uniform parts. Always specify Youngstown—it's your best assurance of quality.

Why not call or write your nearest Youngstown District Sales Office today for additional information or metallurgical assistance?

**Close-up of studs being bored to accomodate their charge of flux (top collet) and then cut-off (center collet). Two finished Nelweld studs, shown in the pan in foreground, were machined simultaneously in the 6-position machine. First operation—feed out and face; second—bore; and third—cut-off.**



**Set-up man is loading ¾-inch diameter Youngstown Cold Finished Bars into a 6-spindle Acme Gridley automatic screw machine.**

**THE YOUNGSTOWN SHEET AND TUBE COMPANY**
*Manufacturers of Carbon, Alloy and Yoloy Steel*
General Offices - Youngstown 1, Ohio
District Sales Offices in Principal Cities

QUALITY YOUNGSTOWN SERVICE

**Cold finished bars**

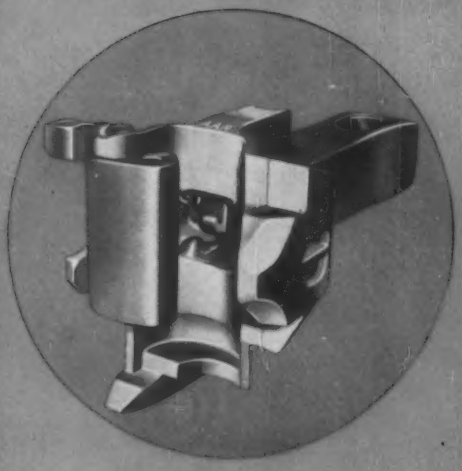
*There's Improved Railroading with*

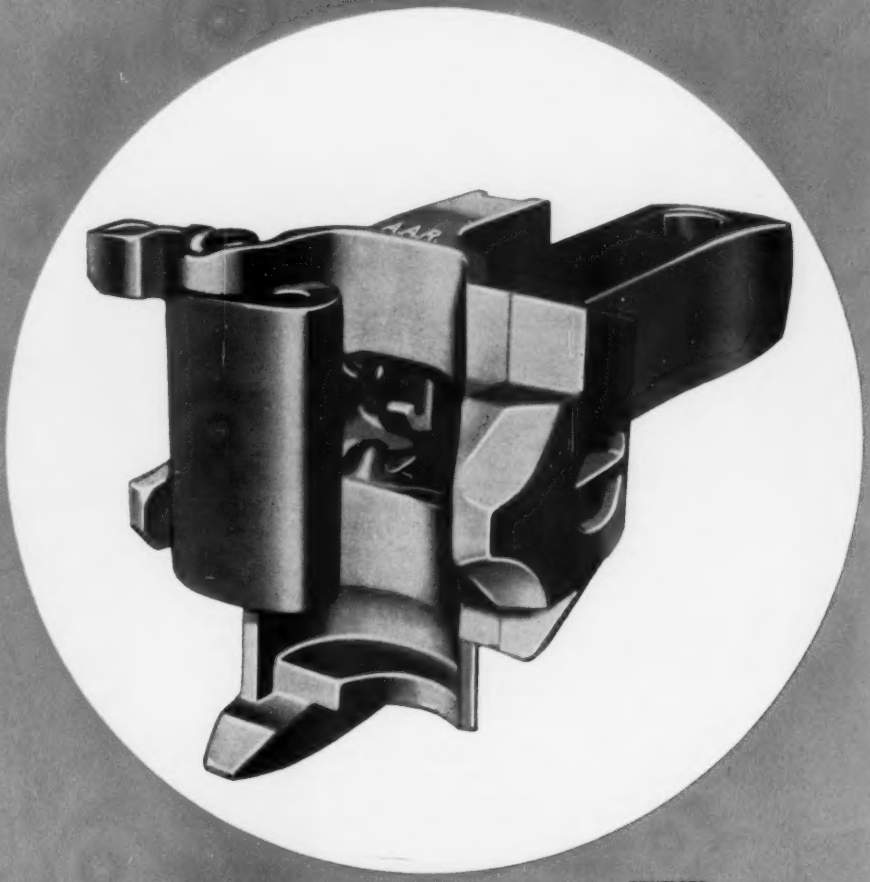
*National Specialties*

*Example:*

# *type F couplers*

*for freight service*






The Type F coupler was developed for freight service after the proven ability of the highly successful Type H Tightlock coupler in passenger service. 22 per cent stronger than the Type E and with interlocking wings for alignment, the Type F is proving its many advantages in service today. The free slack between knuckles has been reduced to about 50 per cent of that in the E coupler. Another safety factor is the centrally located shelf on the lower front face which serves to support a conventional type coupler in event of a pull-out.

AA-5271

LEARN TO PROGRESS P R I MEMBER

COUPLERS
YOKES
DRAFT GEARS
FREIGHT TRUCKS
JOURNAL BOXES

## NATIONAL MALLEABLE and STEEL CASTINGS COMPANY

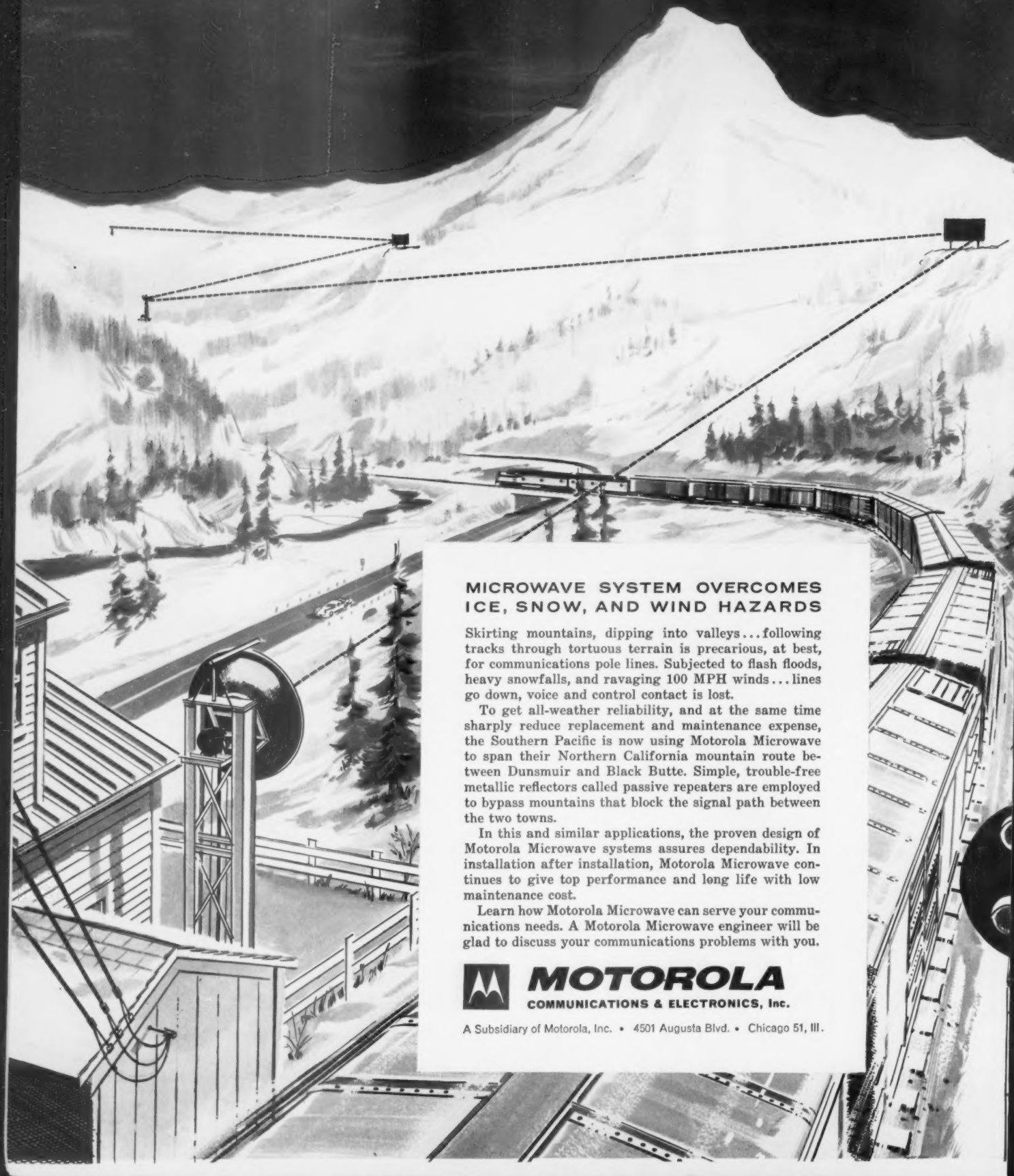
Established 1868

*Railway Division Headquarters*
*Cleveland 6, Ohio*

*International Division Headquarters*
*Cleveland 6, Ohio*

*Canadian Subsidiary*
*National Malleable & Steel Castings Company of Canada, Ltd.*
*Toronto 1, Ontario*

# MICROWAVE REPLACES POLE LINES IN SOUTHERN PACIFIC'S ROUGHEST TERRITORY...



## MICROWAVE SYSTEM OVERCOMES ICE, SNOW, AND WIND HAZARDS

Skirting mountains, dipping into valleys... following tracks through tortuous terrain is precarious, at best, for communications pole lines. Subjected to flash floods, heavy snowfalls, and ravaging 100 MPH winds... lines go down, voice and control contact is lost.

To get all-weather reliability, and at the same time sharply reduce replacement and maintenance expense, the Southern Pacific is now using Motorola Microwave to span their Northern California mountain route between Dunsmuir and Black Butte. Simple, trouble-free metallic reflectors called passive repeaters are employed to bypass mountains that block the signal path between the two towns.

In this and similar applications, the proven design of Motorola Microwave systems assures dependability. In installation after installation, Motorola Microwave continues to give top performance and long life with low maintenance cost.

Learn how Motorola Microwave can serve your communications needs. A Motorola Microwave engineer will be glad to discuss your communications problems with you.

**MOTOROLA**
**COMMUNICATIONS & ELECTRONICS, Inc.**

A Subsidiary of Motorola, Inc. • 4501 Augusta Blvd. • Chicago 51, Ill.

# Why worry about Batteries...

## *Specify* **gould** and relax


America's Finest!
GOULD
KATHANODE BATTERIES
for Diesel Starting

*Dependable* battery performance day in, day out is worth more to you than any other single benefit. Right? That's why Gould has carefully perfected the design of Gould Batteries over long test years. Manufacturing techniques at Gould are also the result of patient development, so that today you are assured of maximum power, long life, and trouble-free operation with *every* Gould battery you buy. Ask for new booklet "...so you're going to buy an industrial battery." Write Gould-National Batteries, Inc., Trenton 7, N.J.



*Always Use Gould-National Automobile and Truck Batteries* *More Power to you from Gould*

RAILWAY AGE
The Industry's Newsweekly

# WHAT'S NEWS in Products

more new products on page 80 ►

### Mercury Vapor Floodlights

*. . . have long life*

After 4,000 hours of burning time, this 400-watt mercury vapor lamp is said to have an average lumen output of about 75% of the initial rating.

These floodlights with new outdoor mercury ballasts and color-improved mercury lamps with an increased longevity and higher maintained lumen output are making mercury floodlighting suitable for a greater diversity of applications. They are available in various types of housings with a choice of beam spreads and beam candlepower, for 250-, 400- and 1,000-watt lamps. They are heavy-duty fixtures equipped with a wide or narrow beam reflector. A cast aluminum alloy housing makes the fixtures dust-tight and weatherproof. Protective painting is unnecessary under normal conditions. *Crouse-Hinds Company, Dept. RA, Syracuse, N. Y.* •

### Protective Paint

*. . . for severe conditions*

Maintz, based on duPont chlorosulfonated polyethylene, in combination with silicone and other resins, is said to produce a coating which is exceptionally tough and long lasting. Reportedly it does not dry to a hard and brittle finish but forms a tough, resilient coating with exceptional resistance to abrasion, weathering, and chemical corrosion. In addition, it has sufficient elasticity to withstand extremes of expansion or contraction without cracking and retains this property at temperatures as low as —40 deg F.

The coating is said to be chemically inert and highly resistant to oxidation, ozone, weathering, acids including nitric and chromic, chlorine solutions, caustic, refrigerants, alcohols, ethers, grease, and many other chemicals and solvents. This combination of chemical and weather resistance is said to have been proven in tests where exposure to both salt spray and tropical weather for over two years have shown no measureable degradation.

As a protective paint it is recommended for buildings, railroad equipment, or other locations where severe conditions present problems in maintaining a protective coating. The paint can be had in white, black and gray, a wide variety of pastel colors. Standard colors are available in 1-, 5-, and 55-gal containers. *West Chester Chemical Company, Dept. RA, Box 39, West Chester, Pa.* •

### Distribution Transformer

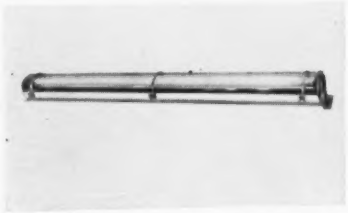
*. . . is dry type*

A dry-type three-phase distribution transformer of new design (type DT-3) is now available. It features reduced weight and size, is quieter, and has improved appearance. The unit uses inorganic insulation, basically silicone, and is designed for 150 deg C temperature rise. The overall volume is 25 to 51 per cent less than that of the maker's previous Class B, 80-deg C design. Weight reductions range from 17 to 32 per cent.

Mechanically isolated core and coils reduce transmission of noise, permitting connection of rigid conduit to the case without causing noise transmission throughout the conduit and mounting equipment.

All terminal boards and connections are in a compartment in the bottom of the transformer where low-temperature conductors can be used since the air in this area is at ambient temperature. Three-phase units in either 600- or 2,400-volt

class are available in ratings from 45 through 300 kva. The new DT-3 dry-type three-phase distribution transformer is shown in the circle. The other unit of previous design has the same rating. *Westinghouse Electric Corporation, Dept RA, Box 2099, Pittsburgh 30* •



### Underpass Lighting

*. . . with fluorescent tubes*

A fluorescent luminaire designed specifically for tunnel and underpass lighting is the Form 106U, a 6-ft, single-lamp unit designed to produce adequate lateral illumination for sidewalls and ceilings as well as to effectively direct the desired amount of light on the roadway.

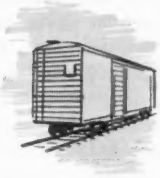
It has a one-piece extruded acrylic plastic globe that has been scalloped to provide the proper diffusion of light. Both the globe and the alzak aluminum reflector are side-hinged for easy access to lamps, ballasts, and wiring. Spring-loaded sockets provide easy relamping when necessary. An extruded aluminum hood and die-cast aluminum end plates provide for reduced maintenance and easier handling.

The luminaire is equipped with adjustable-angle galvanized steel

# SAVINGS FACTS:

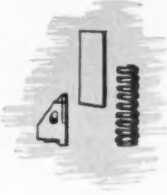
### FACT No. 1

Barber Stabilized Trucks save maintenance costs. When it's necessary to service *Barber* parts, the friction castings and side springs are removed and replaced *5 to 10 times faster* than those of any competitive truck.



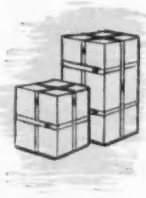
### FACT No. 2

Barber Stabilized Trucks protect your equipment. Their unique system of suspension absorbs and eases . . . by friction . . . the destructive vertical shocks and bouncing as well as the lateral forces which usually result in dangerous nosing and swivelling.



### FACT No. 3

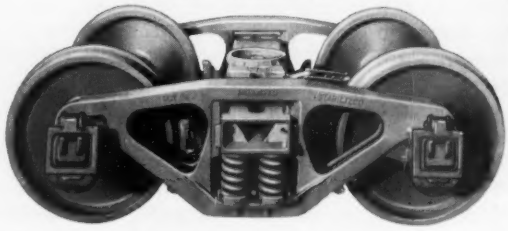
Simplicity and durability in action! Barber's three sturdy parts . . . the special *friction shoe*, the *wear plate* and the *side spring* . . . can be inspected at a quick glance. Fewest possible working parts require less attention, do a better job.



### FACT No. 4

Barber Stabilized Trucks save on damage claims. They provide *the* smoother ride for ladings. Simply stated, Barber Stabilized Trucks provide variable friction for variable loads. No over-solid spring blows! For smoother-riding freight cars, insist on Barber.

**Specify Smoother-Riding**



# BARBER

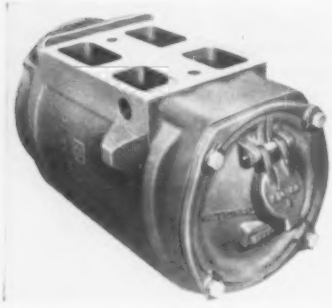
## Stabilized Trucks

Standard Car Truck Company
332 S. Michigan Ave., Chicago 4, Illinois
In Canada
Consolidated Equipment Co., Ltd., Montreal 2

# WHAT'S NEWS in Products

*(Continued from page 78)*

mounting brackets and resilient gasketing and material between the hood and globe. A choice of lamps—Slimline 72T8 (300 ma), Slimline 72T12 (600 ma), and Rapid Start F7T12/CW/Rs—is available. Another feature of the unit is economical ballasting which is achieved by the use of luminaires with two-lamp ballasts in conjunction with ballastless luminaires in multiple luminaire installations. *General Electric Company, Dept. RA, Schenectady 5, N. Y.* •



## Cartridge Bearing

*. . . gets further tests*

Additional interchange service applications of the National cartridge bearing have recently been authorized by the AAR. After exhaustive laboratory testing and road tests by individual railroads, the AAR has now approved further trial of 800 car sets, making a total of 1,000 car sets for interchange service.

This cartridge bearing has been designed to combine features of both solid and roller bearings. Completely sealed the product is a precision sleeve bearing in its own integral housing, which contains oil reservoir and lubricating pad. It fits into the standard freight car integrally cast journal box, or can be used in pedestal type side frames.

In road tests since August 1955, the new bearings are reported to have successfully withstood today's freight service demands. A wheel car on the Great Northern running between Superior, Wis., and Minot, N.D., under severe winter conditions, accumulated 15,000 miles of service, both loaded and empty, at temperatures below zero most of the time and as low as 40 below repeatedly.

A Santa Fe car handling locomotive traction motors and generators between Cleburne, Tex., and San Bernardino, Cal., accumulated 40,000 car-miles in sand and heat. The indicated oil consumption was 0.33 oz per 1,000 miles.

An Erie passenger coach was utilized to accumulate high mileage. Two cartridge units on this car have been in continuous service for 75,000 miles and 6 units for 40,000 miles. The coach has been in both main-line and commuter service constantly. Despite the end thrust encountered on routes with high curvature, bearing performance has been excellent.

Inspection of disassembled cartridge units after all of these tests reportedly disclosed no measurable wear. Chemical analysis of oil samples taken after test showed that the seal effectively prevents moisture, dust, dirt, or other foreign substances from getting into the bearing. Maximum oil consumption, even under the worst test conditions, was no more than 0.4 oz per 1,000 miles.

The new cartridge bearings is cast of a high-strength leaded bronze, and plated with a lead-tin alloy lining of the type used in diesel engine crankshaft and connecting rod bearings. The oil reservoir and the rear seal housing are cast integrally with the bearing.

Installing the new cartridge bearings requires no special shop equipment or training. Because the cartridge is a sleeve bearing, the axle collar is cut off so the sleeve can be slipped over the journal . Three holes are drilled and tapped in the end of the axle so the cartridge can be secured by a new removable collar held by cap screws.

The cartridge fits into the journal box after the dust guard well flanges have been cut off with a torch. A saturated lubricating pad is placed in the cartridge before it is installed, then it is slipped on the journal, and the adapter positioned atop the bearing. The front cover is bolted on, and oil to the proper gage level added to the reservoir through the self-closing filler cap. Since the cartridge bearing has its own cover, the standard journal box lid is not used.

Cartridge bearings can be inserted in journal boxes at the wheel shops, where complete wheel, axle and cartridge sets can be made up in advance for assembly into trucks. The manufacturer recommends an oil check and refilling if necessary after every 3,000 miles. Bearing surface, journal and lubricating pad can be inspected at wheel turning.

Besides aiming at elimination of the hot box problem, the new bearing is said to have the added advantage of economy. Initially, it is said to less than any type of roller bearing assembly. Cartridge bearings can be produced at lower cost primarily because each bearing is essentially an integral bronze casting and not an assembly of many critical parts.

Since cartridge bearings require infrequent service attention, eliminate waste grabs, and conserve oil, they substantially reduce operating costs. Finally, cartridge bearings have a low replacement cost because of their high salvage value. Over 75 per cent of the total weight of the unit is the bronze cartridge casting. The same toll return of scrap, now used for standard AAR journal bearings, will apply to cartridge bearings.

Seven railroads already have the new cartridge bearings on trial or on order, their requirements ranging from bearings for single car tests to orders for more than 100 cars. *American Brake Shoe Company, Railroad Products Division, Dept. RA, 230 Park ave., New York 17* •

## Maximum Storage Space

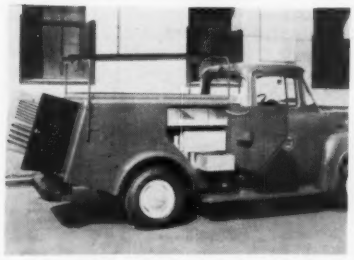
*. . . for lineman's truck*

The new series 1-40 Installers Body for telephone, communications and lineman's work provides maximum storage space for necessary parts and materials which are easily accessible. Overall length of series

more new products on page 88

1-40 is 81 in. width, 58 in. (approximately 6 ft across the fenders). The body is designed for installation on any standard chassis with a 38 in. to 42 in. cab to rear axle dimension.

Space is provided for either 4 ft or 6 ft ladders as specified, as well as all other normal telephone installation and maintenance equipment —apparatus pay-out reel, wire, belts and materials. Spare tire is carried on a special sliding tray in the left-hand compartment. A new feature is the left-hand door, full size to provide for sliding drawers accessible from the driver's side. Has flush, pull-out type door handles with slam-action catches on sides, all locks master-keyed. *Utility Body Company, Dept. RA, 1530 Wood st., Oakland 7, Cal.* •



## Safety Stairs

*. . . for passenger cars*

A cast aluminum stair tread which combines safer footing with low maintenance has been designed for stairs subjected to extreme weathering or corrosive atmospheres. It is a die-cast tread with rough, slip-proof abrasive nosing and rounded, joint-free corners. Units require no protective coatings.

The threads are cast in one piece to distribute loads more evenly over all bearing bars. In tests the stair is said to have withstood loads of over 3,000 lb.

The non-skid nosing is made of fused aluminum oxide abrasive bonded to aluminum plate.

Three finishes are available: "As fabricated" surface for structural work, polished finish for sanitary stairway requirements, or a marine finish that is applicable to passenger car design, where treads are subjected to the elements and constant use. The anodized surface, aluminum painted, provides maximum corrosion and abrasion resistance.

Sizes now range in length from 24 in. to 42 in. Standard width is 10 in., with other widths obtainable. *Aluminum Company of America, Dept. RA, 1501 Alcoa bldg., Pittsburgh 19* •

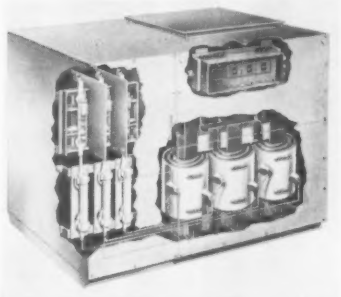
## Draft Gear

*. . . features twin parts*

A new design standard pocket metallic friction freight car draft gear, the Peerless Type T-1, has recently been granted a conditional certificate of approval by the AAR.

Each set of two friction shoes is resisted by its separate spring nest and operates independently of the other. Both sets of shoes are actuated by a common wedge, and during operation both groups work together. According to the manufacturer, this arrangement produces better uniformity of operation, together with high capacity and low terminal forces.

All parts are made from heat-treated high-grade steels, insuring maximum durability, it is said, during normal life of the device. The housing is alloy cast steel and the friction shoes, wedges and spring caps are drop forgings. The springs are high-carbon spring steel. *Poor & Co., Peerless Equipment Division, Dept. RA, 332 S. Michigan ave., Chicago 4* •



## Electrical Load Centers

*. . . in one piece*

A new single-unit integral electrical distribution center requires about 42 per cent less space than conventional distribution centers. The center combines in one piece all three sections necessary for load center applications — incoming line, transformer, and outgoing feeder.

Designed to pass through normal-size shop doors in an upright position, the unit's installed height is 80 in. It is 10 in. lower than conventional centers. For moving purposes, the unit is 78 in. high, because the 2-in. high shield over the air vent on top is removable. It can be shipped, rolled and installed in one piece. It is 37 ½ to 42 ½ in. deep, and from 56 to 106 in. wide.

A complete line of integral distribution centers is available in standard ratings of 75-, 112.5-, 150-, and 225-kva. Standard voltage ratings from 208 volts to 15,000 volts are available. *General Electric Company, Dept. RA, Schenectady, N.Y.* •

## People in the News

*(Continued from page 63)*

**LOUISVILLE & NASHVILLE.**—**Cicero G. Conley** appointed freight traffic agent, Louisville, Ky., succeeding **Arthur C. Lauer,** who retired May 31.

**NORTHERN PACIFIC.**—**C. J. Ryan,** general agent, Aberdeen, Wash., transferred to Spokane, succeeding **L. M. Ackerman,** who retired June 1. **F. F. Wittenberg,** traveling freight and passenger agent, Portland, Ore., succeeds Mr. Ryan.

**ONTARIO NORTHLAND.**—**W. Howard Hurst,** chief clerk and accountant, communications department, appointed assistant purchasing agent, North Bay, Ont.

### OBITUARY

## P. J. Neff, MP Chairman, Dies at 72 in St. Louis

Paul J. Neff, 72, board chairman and former president of the Missouri Pacific, died June 9 in St. Louis.

He had been in ill health for the past several months. Death was caused by a cerebral hemorrhage.

Mr. Neff led his railroad out of a lengthy period of bankruptcy reorganization as first president of the combined Missouri Pacific system. He stepped down just four weeks ago as president to assume a newly created position as chairman of the board. (Railway Age, May 27, p. 11).

His retirement as president came shortly after management forces won a proxy fight

Paul J. Neff

May 14 at the first stockholders' meeting since the road was restored to private operation.

Mr. Neff, educated as a mining and civil engineer, went into railroading after his graduation in 1906 from Kansas University. He joined the MP in 1933; and he was appointed chief executive officer of the road July 1, 1946. In that capacity he began a physical renovation of the system, spending some $340,000,000 for capital improvements in 10 years.

Mr. Neff also worked out a plan for uniting into one system the Missouri Pacific, Gulf Coast Lines, International Great Northern and several smaller lines.

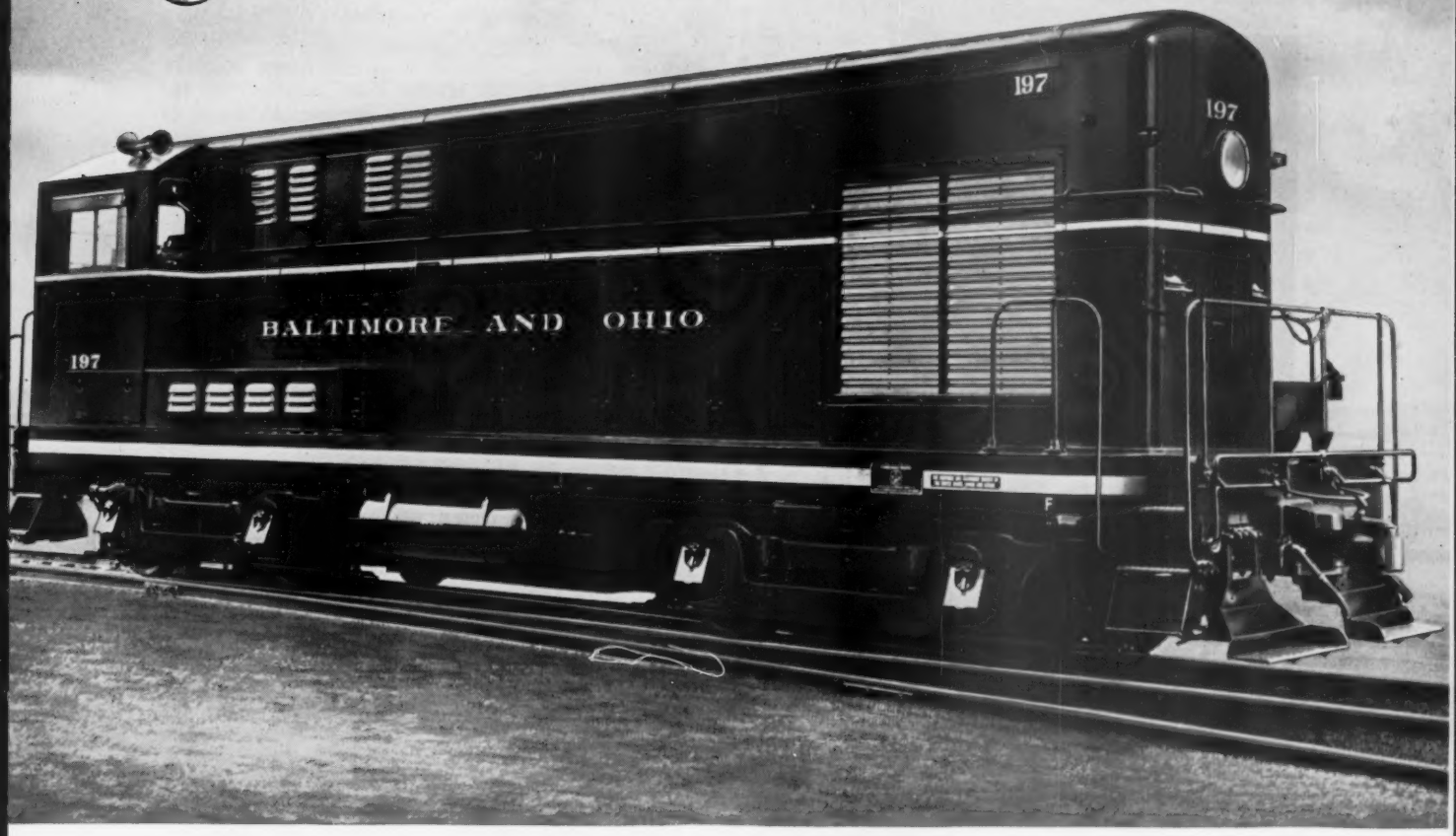
**Henry V. Borjes,** 57, assistant freight traffic manager, Atlantic Coast Line, at Wilmington, N. C., died June 6.

# ANOTHER REPEAT ORDER

## Baltimore and Ohio R. R.

## adds 10 more 1200 and 1600 hp. Fairbanks-Morse locomotives

...DEPENDABLE POWER FOR MODERN RAILROADING




Fairbanks, Morse & Co.,
600 S. Michigan Ave., Chicago 5, Ill.

**FAIRBANKS-MORSE**

*a name worth remembering when you want the BEST*

DIESEL LOCOMOTIVES AND ENGINES • MOTOR CARS AND RAILROAD EQUIPMENT • ELECTRIC MOTORS • GENERATORS • PUMPS • SCALES • WATER SERVICE EQUIPMENT • HAND LAMPS

# Letters from Readers

## *Thank You, Mr. Arpaia*

WASHINGTON, D. C.

TO THE EDITOR:

Last night I had an opportunity to read the Passenger Issue of Railway Age (May 20). It was an exhilarating experience. The articles were instructive and their tone constructive. I can't refrain from congratulating you on this splendid issue. You have rendered a real service to the public, as well as the railroad industry, in the selection of the articles in this issue.

ANTHONY ARPAIA
Commissioner, ICC

## *What Is the Base for Figuring Savings?*

SAN FRANCISCO

TO THE EDITOR:

I read with interest the article in the April 29 Railway Age, "Proper Investment Pays Off Big." This article contained a footnote setting forth an "Assignment for Editors" indicating that there will be several additional articles describing specific cases where capital expenditures involving fixed property produce substantial savings. In view of this article and the indication that there will be subsequent articles pertaining to economics of capital expenditures, I should like to suggest that a common basis be established as to the savings involved prior to initiating any detailed description of specific cases.

From an economic and realistic point of view, I believe it's improper to set forth savings unless everyone determines the savings in the same manner. On the Western Pacific it is felt that the true rate of return, or savings, can be established only through recognizing four factors:

a. Cost of the project;
b. Earnings of the project on a time basis;
c. Economic life of a project; and
d. Time value of money.

In addition, the savings should be established only after due allowance has been made for federal income taxes.

Recognizing the above basis for establishing savings on the Western Pacific, and our experience, I wonder if the returns mentioned on such items as "heavier rail—27.5 per cent; extension of 18 sidings on one division—40 per cent, and replacing oil burning lamps with electric switch lamps—44 per cent" are not somewhat high. Our savings on similar projects are usually substantially lower. We think our more realistic returns enable us to better justify our proposed capital expenditure program.

However, we retain an open mind on the subject with respect to the experience and opinions of others. Perhaps a direct exchange of views between Western Pacific and some of the roads reporting these savings Railway Age refers to would be helpful.

H. C. MUNSON
Vice-President and General Manager
Western Pacific

*• We think Mr. Munson's suggestion of a standardized approach to savings has merit, and would be glad to receive comments from other railroad offices on the same point.*—Editor

*(Continued on page 86)*

## Letters from Readers *(Continued)*

### *Hay or Oats?*

NEW YORK

TO THE EDITOR:

In the April 8 Railway Age there is an item headed "Diesel Holds Big Fuel-Cost Advantage." This article states that in 1956 the "diesel-fuel dollar produced about 72 per cent more gross ton-miles than each dollar spent for current for electric locomotives."

A review of the ICC bulletin "Transport Economics" on which this article was based fails to produce substantiating evidence for this claim. Such a claim might be likened to a statement to the effect that a farmer can get 72 per cent more ton-miles for one dollar's worth of hay fed to oxen than from one dollar's worth of oats fed to horses.

It is at once obvious that such a statement is not only without value, but is grossly misleading to a reader not versed in farming economics and not fully acquainted with the finer points of oxen and horses as draft animals. The oxen would give excellent performance on the stone-boat in cleaning the field, but not harnessed to the produce truck to go to the market. In the latter service the horse would be worth his oats.

In railroad operation it is not only the work performed in ton-miles moved, but the rate at which the ton-miles are moved, or ton-miles per hour, which contributes to the cost of the fuel or power used per ton-mile. The statistics used ignore this factor completely so the comparisons made are without value.

The only comparison of value is the relative cost of the fuel or power used in performing the work done. In the case of diesel fuel this is given as 10.19 cents per gallon. There are about 138,000 Btu's in a gallon of diesel fuel, and if this is all converted to electricity delivered to the traction motors of the diesel, the cost will be .917 cents per kw hr. This can be compared directly with the cost of electric current delivered to the motors at 1.126 cents indicating that electricity produced on the diesel can be 22.6 per cent cheaper than electricity used on the electric locomotive.

The statistics ignore not only the speed at which the ton-miles are moved with each class of motive power, but in the case of electric power costs, the factors which make up such costs.

The only railroads now using electric locomotives in freight service are the PRR, NH, Virginian and Milwaukee. The bulk of the freight ton-miles hauled is on the first three mentioned roads, and probably the costs of power on the first two largely determine the 1.126 cent figure. The cost of electricity to these two railroads is largely determined by the passenger traffic (commuter) peak hour. Such costs would be much higher for passenger service alone because of the poor load factor.

The off peak power used in freight service improves the load factor and lowers the entire rate. Obviously therefore, the power used in freight service costs not much more than the "energy charge." In most current power contracts this is about 8 to 9 mills per kw hr, which is about on a par with diesel costs.

The outstanding item of interest to railroad operators in this article is that in the last year coal costs increased 7.33 per cent, diesel fuel went up 3.87 per cent but electric power costs were very nearly stationary. They rose but 0.36 per cent.

This is the factor to watch for next year, not ton-miles per dollar.

H. F. BROWN
Gibbs & Hill
Consulting Engineers

### *Plea for Delay*

NEW YORK

TO THE EDITOR:

On Aug. 1, unless some action is taken in the meantime, the nation's railroads will be confronted with a new AAR standard practice that will make it mandatory to equip all new freight cars and cars undergoing major repairs with an approved lubricating device in place of thread packing. This practice would involve the railroads in annual expenditures running into several million dollars.

There are those who feel that the new standard was adopted too hastily by the AAR, and that considerable railroad operating personnel are not actually aware of the potential consequences of this standard. We feel that Railway Age would perform a service to its readers by calling attention to the diversity of opinion existing on the merits of the new standard.

This new standard was originally slated to be effective Jan. 1 of this year, but was postponed until Aug. 1. No action has yet been announced that might postpone the Aug. 1 effective date.

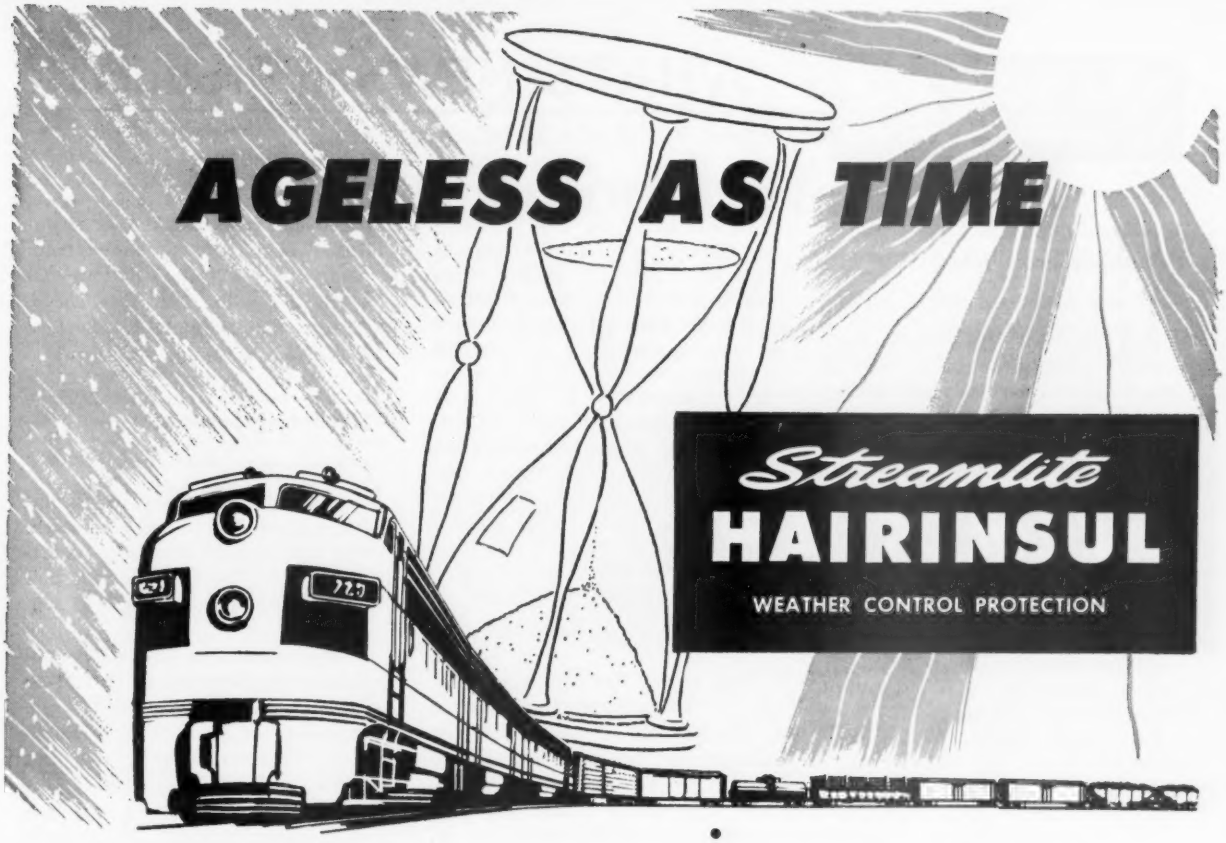
The new standard was adopted after a letter ballot dated March 5, 1956 (Circular No. D.V. 1348). Sentiments expressed at the time by the railroads voting—those voting against it and some of those for it—were critical of the proposal, on the basis that such lubricating devices as have been in service on an experimental basis had not yet been sufficiently proved in service. Moreover, some roads pointed out that compliance with the new standard would cost millions of dollars with no assurance of improved performance as a result

Lubricating devices such as those involved add about $40 or more per car set for the initial installation and for all subsequent replacements when compared to the cost of properly prepared journal-box packing.

In addition, some railroads would have preferred to vote for the acceptance of a modified proposal that would permit the use of some form of journal stop such as the R-S stop in connection with thread packing as coming within the meaning of a container-retainer for packing as mentioned in the committee's recommendation. But this proposal was not submitted to them on the ballot.

W. R. COMPTON JR.,
Executive Director,
Institute of Thread Machiners

*Mr. Compton's letter presents the viewpoint of the waste producers' association; the statement below represents the viewpoint of the AAR Mechanical Division. Railway Age, acting as a reporting medium, has only the purpose of presenting both sides of the case. The AAR, which has been experimenting with journal pads since late in 1952, states its case this way: Early industry surveys showed that approximately two-thirds of hot boxes were traceable to some deficiency in waste packing. Five years were spent in studying the problem. Now, according to an AAR spokesman, roads using journal pads report average mileage per hot box setout is about three times that in cars equipped with waste packing. Based on this research it would seem, he points out, that railroads cannot longer delay this change.*—Editor.




## Assures Safe Shipping of Perishables

***Car building engineers have long recognized that Streamlite HAIRINSUL is the most efficient insulation under all operating conditions. A half century of successful use is proof enough that service conditions never retard its high insulating efficiency.***

***Not only is Streamlite HAIRINSUL a one-time investment; it actually outlives the life of the car and can be salvaged in perfect condition for use in new cars.***

**AMERICAN HAIR & FELT COMPANY**
Merchandise Mart • Chicago, Illinois

### SIX MAJOR REASONS WHY LEADING REFRIGERATOR CAR LINES SPECIFY *Streamlite HAIRINSUL*

1. **LOW CONDUCTIVITY.** Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity—.25 btu per square foot, per hour, per degree F., per inch thick.
2. **LIGHT WEIGHT.** Advanced processing methods reduce weight of Streamlite Hairinsul by 40%.
3. **PERMANENT.** Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.
4. **EASY TO INSTALL.** Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.
5. **COMPLETE RANGE.** Streamlite Hairinsul is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other specified coverings are available.
6. **HIGH SALVAGE VALUE.** The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.


***SETS THE STANDARD BY WHICH ALL OTHER REFRIGERATOR CAR INSULATIONS ARE JUDGED***

RAILWAY AGE
The Industry's Newsweekly

# WHAT'S NEWS in Products

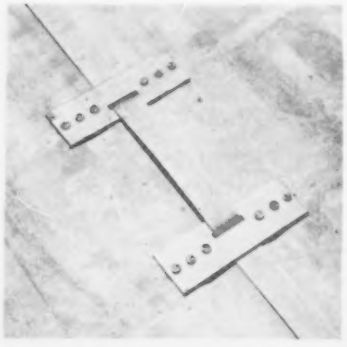
*(Continued from page 81)*

### Portable Generator

*. . . has vertical shaft*

Two 1,500-watt portable electric generator models of vertical shaft type are designed to place loads normally imposed on the main bearing shaft in horizontal designs are shifted to the framework. Since the engine main bearing and shaft only has to turn the armature and not support it, longer and more efficient service is expected. Another reported advantage of this is simple shock mounting isolating the armature action and engine vibration from the frame. Assembly floats in the framework that serves also as guard and carrying handle.

Gasoline powers the two models EG-1.5A for a-c and EG-1.5D for d-c providing 13 amp, 115-volt current for operation of electric drills, saws, hammers, concrete vibrators and the like. The generators weigh 95 lb, are 23-3/4 in. high and 23-in. in diameter. Each has a four-cycle, single-cylinder, air-cooled engine with automatic rewind starter. A toggle type ignition switch eliminates shock danger and inconvenience of shorting straps. Two plug-in outlets are provided, and it has a power output up to 1,500 watts. *Thor Power Tool Company, Dept. RA, Aurora, Ill.* •



### Mechanical Breaking Plates

*. . . dissipate loads*

Model NSFB mechanical breaking plates, made of smooth finish heavy gage steel, make possible the use of controlled floating loads in box cars with modern steel flooring. Used with heavy-duty steel strapping and always nailed to the floor in pairs, they dissipate shocks which otherwise would be transmitted to the load. Forward and backward movements caused by impacts and creeping caused by vibration of the cars are reduced to a minimum. This is accomplished by breaking friction as strapping is drawn through the slot in the plates under impact. *Signode Steel Strapping Company, Dept. RA, 2600 North Western ave., Chicago 47* •

### Electric Lantern

*. . . has steel case*

The Model 500 unit has a one-piece weatherproofed electrolytic steel case and an adjustable rigid, non-tipping base to hold the lantern in various positions. A positive action toggle switch is accessible when gripping the handle. A 4-1/2 in. silvered reflector and diffusing lens throw a broad beam of medium intensity. The same lantern, with aluminized reflector, sealed beam or sealed unit reflectors, throws an intense light of narrow or wide spread. Lantern is 9 in. high, 7 in. long and weighs 1-1/2 lb. *Star Headlight & Lantern Co., Dept. RA, Honeoye Falls, N. Y.* •

### Air Spring Suspension

*. . . for truck trailers*

A new air spring suspension unit for truck-trailers is in production. The first model—a tandem—is designed to lighten the suspension unit by a considerable amount over conventional rigs.

The device has an automatic compensating system which is said to maintain axle-to-trailer floor height regardless of load or road conditions. The manufacturer says this feature alone, by reducing cost of running-gear maintenance and lowering damage freight claims, provides truckers with a means of lowering operating costs. *Youngstown Steel Car Corporation, AiRide Division, Dept. RA, Niles, Ohio* •

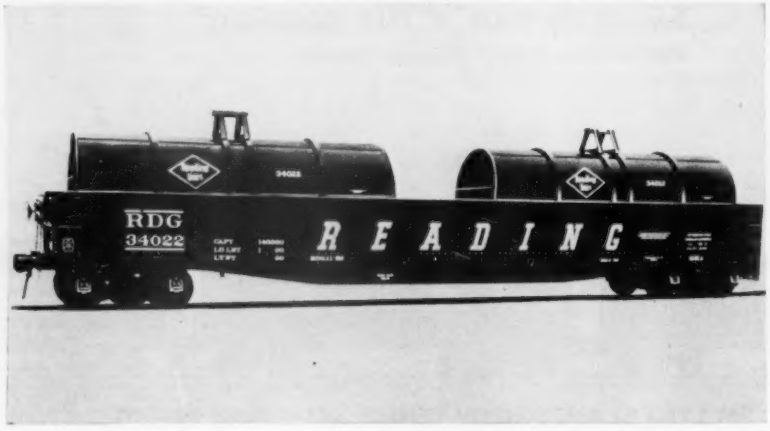
---

### Car Cover

*. . . shows stability*

This steel cover for freight cars eliminates the shrouding of steel in transit. It weighs 1,350 lb, is waterproof, vented to prevent condensation, and can be lifted off cars with a crane. Covers may be readily stacked, or nested without danger of damage.

A 600-lb weight suspened at each end of a cover deflects its bottom rail only 1/4 in. *Dana Corporation, Parish Pressed Steel Divison, Dept. RA, Reading, Pa.* •



## Current Publications

### PERIODICAL ARTICLES

**WHY THE TOLL ROADS ARE DYING. Railway Progress, May 1957, pp. 36-41. Federation for Railway Progress, 1430 K st., N.W., Washington, D.C. Single copies, 35¢.**

Unable to compete with tax-built roads, America's pay-as-you-drive turnpikes are fast going under in a sea of red ink.

•

**RAILWAY ENGINEERING, January 1957. Vol. 1, No. 1. Odhams Press, South Africa (Pty.) Ltd., Ardis House, 16 Bree st., P.O. Box 2598, Cape Town, South Africa. Subscription rate to countries in the African Postal Union, 35 shillings; overseas, 42 shillings, per year.**

A new monthly journal covering all public railway systems, industrial railways and railway road motor services in Africa south of the equator. Feature articles in this issue cover a £5,200,000 rail link in Western Uganda; diesel-electrics for Bulawayo-L.M. Line; South African railways electrification; new Garratt type locomotives; American diesel locomotives for gold and copper mines in Southern Africa; and South African railways' longest tunnel.

•

**RAILROAD RENAISSANCE IN THE ROCKIES, by Robert G. Athearn. Utah Historical Quarterly, January 1957, pp. 1-26. Utah State Historical Society, 603 East South Temple, Salt Lake City, Utah.**

An account of the 1935-47 trusteeship of the Denver & Rio Grande Western.

•

### *FROM THE MANUFACTURERS*

**AIR DIFFUSERS. Selection Manual No. 60. 80 pages. Anemostat Corporation of America, Dept. RA, 10 East 39th st., New York.**

This manual on air diffusers for air-conditioning, heating and ventilating systems contains numerous diagrams and tables to aid in selection of diffusers and accessories for all-air high velocity as well as conventional air-conditioning systems and units. Illustrates over 90 types of round, square and straight-line diffusers. Includes also air-distribution definitions, sound level characteristics, static pressure factors, and typical installations.

•

**TRAXCAVATOR OPERATOR'S GUIDE. 12 pages. Caterpillar Tractor Co., Peoria, Ill., or nearest dealer. Form No. 32109-DE636. Free.**

This illustrated, four-color booklet tells how to get the most work from Traxcavator Nos. 933, 955 and 977. It illustrates operating components on all three models, with step-by-step instructions for complete operating cycle, and explains proper methods of loading, back filling, clean-up work, grading and spreading, transporting concrete, and building culverts. It also shows how to use attachments, with instructions for scrapers, rippers, log and lumber forks, quarry buckets, straight and angling bulldozers, skeleton rock buckets, light materials buckets, and root and rock rakes.

*(Continued on page 90)*

*(Continued from page 89)*

**ALCO PRODUCTS BULLETIN.** Alco Products, Inc., Dept. RA, P.O. Box 1065, Schenectady 1. Free.

A two-color illustrated bulletin describing the company's line of eight export diesel-electric locomotives. It presents detailed specifications of the eight locomotives—ranging from the 900-hp DL-430 switcher through the 1800-hp DL-500 "World" unit and the DL-600, a 2400-hp heavy-duty, all-purpose unit. Included is information on ALCO's new 251 series of three diesel engines, which power all the locomotives. Other sections describe an improved wheel truck, new electrical control systems and ALCO's complete range of customer service and training programs.

•

**WROUGHT IRON FOR RAILROADS.** 36 pages, illustrations. A. M. Byers Company, Dept. RA, P.O. Box 1076, Pittsburgh 30. Free.

This two-color booklet illustrates some outstanding mechanical and engineering railroad applications of wrought iron. They include air brake and steam piping; car retarder systems; car charging lines; swing hangers; nipples; spring bands; staybolts; freight classification yard, diesel facility, building and sprinkler piping; radiant heating; snow melting; car and switch de-icers; conduit; signal and bridge-warning masts; bridge deck, blast, bridge pier protection, and girder cover and protection plates; fire curtains; bridge railings; transfer bridge pontoons; bridge tie spacers, and tunnel drains.

•

**BOSS OF THE BIG JOBS** (Folder CR-565-G). 8 pages, illustrations. International Harvester Company, Construction Equipment Division, Dept RA, 180 N. Michigan ave., Chicago 1. Free.

The 200-hp TD-24, largest in the IH crawler line of seven units, is described in this pamphlet. The solid framework of the unit, planet power steering, and the option of torque converter or gear drives are emphasized. Line drawings illustrate components of the torque converter drive system, the main frame, and a cutaway exposure and explanation of the planet power steering system. Diagrams illustrate steering clutch positions when operator desires unit to make gradual, feathered or pivot turns.

•

**ACF RETRACTABLE TRAILER-HITCH.** Illustrations, drawings. Advertising Department, ACF Industries, Inc., American Car & Foundry Division, Dept. RA, 30 Church st., New York 8. Free.

ACF has issued two pamphlets on its retractable trailer-hitch. One is a 20-page booklet containing general information, and the other is an 8-page booklet containing general data and operating instructions.

•

**BULLETIN HWC 541.** 32 pages. Huber-Warco Company, Dept. RA, Marion, Ohio. Free.

Describes in detail each of Huber-Warco's motor graders, tandem rollers, three-wheel rollers and the maintainer.

# ADVERTISERS


American Brake Shoe, Railroad Products Division 19-30
American Hair & Felt Company ..... 87
American Steel Foundries ..... 44-45
American Telephone & Telegraph ..... 38
Association of American Railroads ..... 42
Automatic Electric Sales Corporation ..... 64-65

Bendix Aviation Corporation, Radio Division .... 66
Bird & Son, Inc. ..... 40
Buckeye Steel Castings Company ..... 43

Classified Advertisements ..... 91

Edgewater Steel Company ..... 6
Edison Company, Thomas A., Industries of McGraw Edison Company ..... 90
Electro-Motive Division, General Motors .. Front Cover
Erman-Howell Division ..... 91
Esso Standard Oil Company ..... 17
Exide Industrial Division, Electric Storage Battery Company ..... 36-37

Fairbanks-Morse & Company ..... 83

General Steel Castings ..... 48-49
Gould-National Batteries, Inc. ..... 77

Heywood-Wakefield Company ..... 32-33
Hillman Company, Inc. C. Kirk ..... 91
Hyatt Bearings Division of General Motors Corporation ..... 4
Hunt Company, Robert W. ..... 91

Institute of Thread Machiners, Inc. ..... 31
International Steel Company ..... 71
Iron & Steel Products, Inc. ..... 91

Kinnear Manufacturing Company, The ..... 82

Lewis Bolt & Nut Company ..... 85

Magnus Metal Corporation ..... 8
Mahon Company, R. C. ..... 47
Mak Maschinenbau Kiel, AG ..... 69
Miller Lubricator Company ..... 70
Miner, Inc., W. H. ..... 3
Motorola Communications & Electronics, Inc. .... 76

National Aluminate Corporation .. Inside Front Cover
National Malleable & Steel Castings Company .... 75
New York Air Brake Company, The ..... 50

Peerless Equipment Company ..... 41
Pullman-Standard Car Manufacturing Company 67-68

Railway Educational Bureau, The ..... 91

Safety Industries, Inc. ..... 12
Security Packing Retainer Company ..... 84
Security Railway Products Company ..... 85
Servo Corporation of America ..... 89
Smith, Inc., L. B. ..... 35
Sperry Rail Service Division of Sperry Products, Inc. ..... 72
Standard Car Truck Company ..... 79
Standard Oil Company of Indiana ..... 51
Stran-Steel Corporation, Unit of National Steel Corporation ..... 34
Stucki Company, A. ..... 85
Symington-Gould Corporation, The .. Inside Back Cover

Thermo-King Corporation, The ..... 46
Timken Roller Bearing Company ..... Back Cover

Uni-Pak Corporation ..... 39

Westinghouse Air Brake Company ..... 73

Youngstown Sheet & Tube Company ..... 74


This index is an editorial feature, maintained for the convenience of readers. It is not a part of the advertiser's contract and Railway Age assumes no responsibility for its correctness.

# CLASSIFIED ADVERTISEMENTS

**Rates: $10 per column inch (1" deep x 1⅝" wide)**
**Equipment used or resale acceptable in this section**

# Critics Aim at the Wrong Target

It seems to be taken for granted by some people that there is an axiom for the judgment of the competence of business management which must go something like this:

**If a business is making a lot of money, its management must be very smart. Conversely, if the business is earning only 4 per cent or less on its investment, its management must be deficient.**

The assumption that there is such an axiom is the only reason there could be why the leaders of the railroad industry are subjected to such a constant barrage of criticism, however well-meant. There is, however, no such axiom. Some of the businesses which are at present doing so well are doing so because of large defense orders. Others happen to be involved in the manufacture of new products which enjoy a large popular demand. Luck has just as much to do as foresight in the prosperity of many of these booming industries.

### *How Good Is Management?*

There are many railroads in this country whose methods of selecting and training management personnel are as thorough as those of any of the nation's leading manufacturers. Nevertheless, these manufacturers may be earning 20 per cent on their investment while railroads, equally well managed, succeed in earning only a fifth as much. It is not a situation of good management *versus* mediocre management, but one of a relatively easy management job *versus* a very tough one.

Railroad management has all the problems of the management of any manufacturing industry—plus two further problems with which no other large business is confronted. These are (1) the necessity of adjustment to rapidly changing transportation conditions and (2) rigid governmental restrictions and regulations which impede any change whatsoever—and, at best, impose intolerable delays.

There isn't any use singing the blues about this condition, because nobody is interested in hard luck stories. But, at the same time, it isn't necessary to take all the criticism to which railroad management is subjected—without pointing out where the trouble really lies.

President William F. Faricy of the AAR made a speech to the railway public relations officers at their meeting at Edgewater Beach, Miss., on June 6, in which he reviewed railroad accomplishments in the past two decades. These accomplishments include the almost complete changeover in motive power, the handling of a larger traffic load with fewer units of equipment, the vast improvement in track, in CTC installations and yards. No other industry in the country has done more to re-equip and modernize itself—in comparison to the financial means at its disposal.

As Mr. Faricy pointed out—when a $2,500 car is replaced with one costing $8,500—the railroads have to find $6,000 of new capital. And this isn't capital for expansion of facilities, but funds necessary to keep railroad plant from shrinking. Thus, in order to replace 75,000 old cars with 75,000 new ones, the railroads need $450 million of new capital investment.

And this is just for the replacement of freight cars. There must still be found funds for the replacement of worn-out locomotives and other obsolete plant—as well as for improvements and expansion. Mr. Faricy suggested three means whereby the railroads might supply themselves adequately with the necessary new capital: (1) larger earnings (through greater freedom in rate-making for the railroads and less subsidization and other governmental favors to rival forms of transportation); (2) lower federal taxes for the railroads than the 52 per cent they now must pay; or (3) permission to set up tax-free reserves for plant replacement.

### *No Apologies Needed*

There is here a positive public relations story for the railroads to tell. It includes (a) their remarkable accomplishments in plant modernization over the past two decades; (b) the alertness and high quality of management; and (c) the continuing need of the public for high-grade railroad service—which can be guaranteed only if one of the three measures (or something similar), suggested by the AAR president, is adopted by government.

Mr. Faricy gave credit to one of the forebears of this paper for inventing the term "public relations," almost a half century ago. And he pointed out that the railroad industry has been at the forefront in the public relations profession throughout its existence. He believes the railroads have a powerful story to tell. They certainly have. And it is not an appeal to sympathy that is needed, but a direct aim at the public's self-interest in continued and improved efficiency of railroad transportation.

**The railroads have all the makings of a "growth industry," an industry with a far bigger future than its praiseworthy past. The hurdles to be overcome are formidable, but not insuperable. And the way to overcome them is for railroad men to attack the handicaps and put less emphasis on criticizing themselves.**

# OVER 2,000,000 SOLD SINCE 1950

LIGHT...STURDY...EASILY APPLIED

# Symington®

## COMPOSITE ARTICULATED JOURNAL BOX LIDS


MALLEABLE IRON HOUSING

COLD-FORMED STEEL

**A. A. R. CERTIFICATES 1, 5, 11 & 43 SPEC. M-120-51**

SYMINGTON COMPOSITE ARTICULATED JOURNAL BOX LIDS with full articulation . . . provide a positive seal, protecting journal and bearing against damage from rain, snow and dirt. Full pin-bearing area reduces wear in the housing. Hinge lug wear is reduced by the roller-bearing torsion spring.

WRITE FOR ILLUSTRATED BULLETIN J-309

THE Symington-Gould Corporation

WORKS: DEPEW, NEW YORK

New York • Chicago • St. Louis • Boston • San Francisco • In Canada: ADANAC SUPPLIES, LTD., Montreal, Quebec

# New facts about an old problem, wheel slip—and how to eliminate it

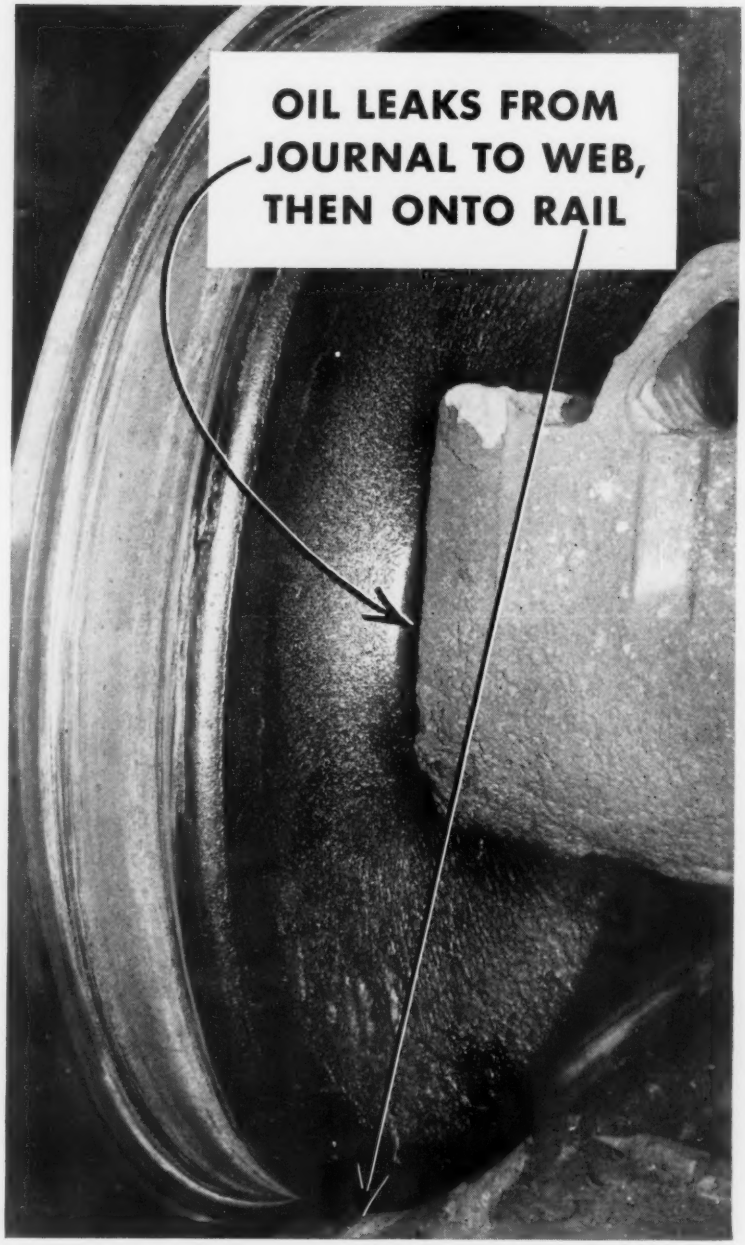
RAILROADS have become increasingly aware of diesel-electric locomotive wheel slip. And they've discovered that a major cause of slip is oil leaking onto the rail from the journals of friction-bearing-equipped freight cars. Oil runs down the wheel web to the tread and is deposited on the rail. And then it is spread over the rail by fog, dew, or light rain.

When a diesel-electric locomotive hits an oily section of track, the driving wheels slip and motor armatures overspeed. This can cause "flashover" in both traction motors and generators and can result in (1) burned-out armatures and loosened windings, (2) locked axles (causing flattened wheels, scored rails and sometimes wrecks), and (3) repairs on locomotive generators and drive motors.

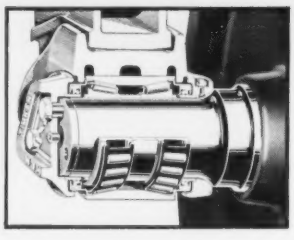
Some railroads are installing "slip indicators". These pinpoint *where* the wheel slip is occurring. But they can't eliminate the cause.

Timken® tapered roller bearing sealed units *prevent* lubricant loss. And Timken bearings are normally lubricated with grease, which tends to stay where it belongs. By eliminating this major cause of wheel slip, Timken bearings allow railroads to utilize more fully the greater motive power of diesel-electric locomotives. And they make possible large savings in generator, motor and wheel and rail maintenance costs.

Timken tapered roller bearings eliminate the hot box problem and reduce operating and maintenance costs to a minimum. Now, doing away with the wheel slip problem is still *another* advantage of Timken bearings. A Timken Company engineer will be glad to show you how. Write, wire or phone, The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable address: "TIMROSCO".




**TIMKEN**
TRADE-MARK REG. U. S. PAT. OFF.
***TAPERED ROLLER BEARINGS***



NOT JUST A BALL ◯ NOT JUST A ROLLER ⬭ THE TIMKEN TAPERED ROLLER ⬭ BEARING TAKES RADIAL AND THRUST→◫←LOADS OR ANY COMBINATION→✳←